



AppleUser

A Database Publication

Vol. 8 No. 5 May 1987 £1.25



Dissecting
MultiScribe

DIY printing
with the Mac

Making use of
fancy fonts

Fun with multi-
choice quiz

BDOS function
calls in C/PM 2

Is Swyftware all
it claims to be?

REVIEWS

*Starglider • Brian
Clough's Football
Fortunes • Prince
King of Chicago
Hollywood Hijinx*



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that I made

in a few days

using a font called

Camelot is something special

This is the "Saigon" font.

THIS IS CALLED BOISE

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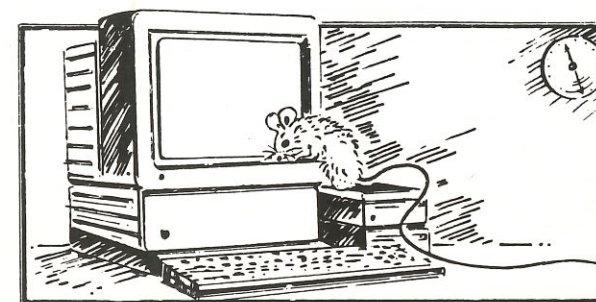
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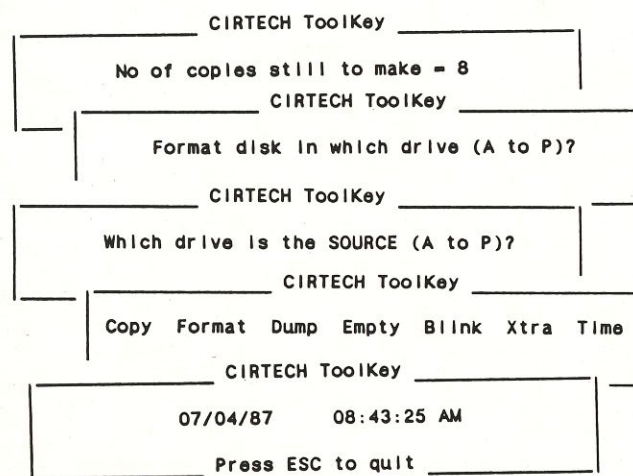
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A brand new, sophisticated operating system!

The CIRTECH CP/M Plus System lets you use the huge range of CP/M programs, like Wordstar and dBASE, on your Apple IIGS. The CP/M Plus System comprises a lightning-fast, co-processor card and the most advanced version of the CP/M Plus Operating System software specially designed to fully utilise the powerful features of the GS.

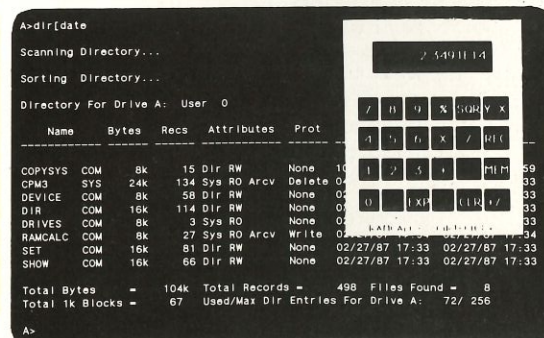
The compact hardware card plugs into one of the standard GS expansion slots and has been designed with a fast 8 MegaHertz Z80H microprocessor to boost the speed of your programs – and for extra speed, the GS operates in fast mode with the CP/M Plus System!

The CP/M Plus Operating System is full of versatile, user-friendly features. Special ToolKey utilities instantly pop up in a unique window display and you can use them all at any time, even in the middle of running a program!



- **COPY** and **FORMAT** are inbuilt disk formatter and copier functions for all standard types of disks (3.5, Profile, SCSI, 5.25, etc.) – *no more problems running out of disk space in the middle of a program!*
- **DUMP** lets you print an instant 'snapshot' of the current text screen at any time.
- **EMPTY** clears the internal printer and auxiliary output buffers. *Yes, the CIRTECH CP/M Plus System has an inbuilt printer buffer (spooler) 12K in size – that's enough for about 20 A4 pages!*
- **BLINK** controls the cursor – *you have the choice of blinking or static!*
- **XTRA** lets you print multiple copies of everything that's in the printer buffer at any time during a CP/M program; *and printing is in 'background mode', so you save time too!*
- **TIME** instantly displays a neat, on-screen window giving you the current time and date – *no excuses for being late now!*

The CIRTECH CP/M Plus System also features **RAMCALC**, an **ON-SCREEN, FULL FUNCTION CALCULATOR** which you can call up instantly any time you want from within any CP/M program. The calculator has all the normal arithmetic functions *plus* percentage, square root and memory! *And there's no problem if you put RAMCALC away without noting the answer, just call it back and it appears again instantly, exactly as you left it, right down to remembering what's in memory!*



The CP/M Plus System also lets you use the AppleMouse with any CP/M program or change the Mouse control characters with the 'SETMOUSE' utility. The System is fully compatible with all standard CP/M programs and is supplied with over 40 utility programs, including extensive disk-based 'Help' files. All Apple-standard devices such as UniDisk, Disk II 5.25 drives, 3.5 drives and ProFile or SCSI hard disk drives are fully supported – *you can even use ProDOS and CP/M Plus on the same hard disk!* The System is also fully compatible with plusRAM, GS and other Apple standard memory expansion cards.

CIRTECH CP/M PLUS – FOR TOP PERFORMANCE AND SPEED – ONLY £118.00

Also available for the 128K //e and //c (3.5 or 5.25 disk format)



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Buy Mac and save £1,200!

ADVICE will soon be on the way from Apple to customers – on how to spend £1,200.

For that is how much they will save when they buy one of the new Macintosh II models in place of a comparable IBM from the recently-launched PS/2 range.

Apple boss John Sculley pointed out that whatever the claims for the PS/2s and whenever they might be ready, their new operating system (MSdos OS/2) looked like being delayed.

"IBM is probably the only company that could try to do a brain transplant without the new brain being ready", he said.

Meanwhile the Mac II is on time and has full operational backup.

Comparing the Macintosh II with the IBM PS/2 80, both are 32 bit machines with minimum 1Mb ram, massive disc storage of 40Mb upwards and expansion capabilities.

The IBM range costs £4,727 to £7,245.

The Mac range costs £4,500 to £5,500.

But then the Macintosh II also has a 68881 maths co-processor, system software and a 13in colour monitor thrown in at the same price. Anyone wanting these things for the PS/2 80 will have to spend another £1,200...

Apple is urged to ease boycott

APPLE is being urged to moderate its trade boycott of South Africa because the company's policy is hurting the people it is designed to support.

In a bizarre twist to the situation, shortages of Apple hardware and software are hampering the opponents of apartheid.

This is particularly affecting those members of South Africa's "alternative" press – anti-government newspapers and periodicals – which use Apple desktop publishing technology.

A spokesman for a group of opposition newspapers published in South Africa told *Apple User*: "Apple's disinvestment and perpetual refusal to respond to our pleas means we have little hope of obtaining new equipment, up-to-date software or of having our machines repaired."

"Apple II and Macintosh products have been used extensively by anti-apartheid organisations in South Africa and many more would invest in these products if they were available and well supported."

"But all attempts by such organisations to contact Apple for help have failed to produce more than a polite refusal by Apple to co-operate. I appeal not just to

Apple but to all the distributors and manufacturers of third party Apple products to lend a more understanding ear to the problems of Apple users in South Africa."

Apple-owning South Africans have been suffering from the results of the boycott for nearly two years.

Apple announced its decision to stop supplying products to South Africa in the summer of 1985. Final shipments were made to Johannesburg distributor Base2 in September that year.

Another Johannesburg firm called Microsciences currently operates a service to support the installed base of Apple products in South Africa. The fact is that

Apple's provision of service parts to Microsciences is the company's sole remaining formal link with South Africa. This was described by a spokeswoman as "demonstrating Apple's commitment to its customers".

However, Apple users in South Africa say they are forced to pay inflated prices for support products and services – which many anti-apartheid organisations cannot afford.

"It would be a tragedy if we had to close down our publications – the only ones that stand up to the government – because our Apple equipment can't be properly maintained", said the opposition newspaper group spokesman.



The Mac II with DTP in action

Full colour DTP arrives

SUPPORT firms have been quick to respond to the launch of the new open architecture Macintosh II.

Distributors Heyden and Son are claiming that a new desktop publishing era has begun through the combination of the new machine and the Quark XPress.

Colour printing is the package's main claim to fame. It is a professional publishing system with word processing, typesetting and layout facilities.

When used with the Mac II it displays full colour documents on

screen. With the LaserWriter, XPress produces full colour separations directly and prints spot colour with the ImageWriter II.

Heyden says that this means small publishers can now produce colour documents with the same precision in layout and typesetting as can be produced by large full service printers.

The word processor, which has an 80,000 word spell checker, can read from other programs. Price £695.

AST has produced three new products for the Mac II. MAC286 allows users to run MSdos appli-

cations, AST-ICP makes it possible to offload communications functions from the CPU, and AST-RM4 eases the expansion of the computer's memory.

Unisoft, the US subsidiary of the British computer firm Root, has tailored a version of its System V operating system for the Mac II. A/UX combines features from several environments, increasing the number of applications which will run on the new machine.

Lotus has committed itself to the new machine, too. The company is working on a new package called Galaxy which will

include worksheet, graphics word processing, communications and forms modules. Each section is programmable and a command language will be installed which will enable the execution of a series of instructions with a single key stroke.

Cricket Software has produced a new version of its graphics program Cricket Draw to take advantage of the Mac II's colour capabilities and other features. The new version utilises the machine's mathematics coprocessor tremendously to increase the speed of programs.

The best of MacPaint and MacDraw:

SuperPaint is the most advanced graphics creation tool available for the **Macintosh**. It has two layers; one for editing dots like MacPaint, and one for manipulating objects like MacDraw. The features read like a Christmas wishlist. Full-screen editing. Multiple windows. 3 levels of magnification. Reduced view. Creates shapes bigger than the screen. Draws circles and squares from the centre. Text can be edited. LaserWriter Fonts. Open and save MacDraw PICT and MacPaint files. Print multiple copies. Colour printing on ImageWriter II. Makes full use of big screens.

Best of all, there's LaserBits™, dot-by-dot editing at 300dots-per-inch resolution. The results printed on a LaserWriter are stunning! Paste these graphics into other programs and they retain their 300dpi resolution! In fact, the Superpaint file format has just been adopted as the standard by all seven major US scanner manufacturers for 300dpi graphics editing.

Here's what the US reviewers have been saying about it:

"**SuperPaint** is the best paint program available on the Macintosh today" - Adrian Mello, *MacWorld*, Jan '87

"I can really review **SuperPaint** in two words: Get it!"

"**SuperPaint** is the hottest graphics package currently available."

- Sharon Aker, *MacUser (US)*, Feb '87

- CJ Weigand, *MACazine*, Jan '87

When all you want is a masterpiece **SUPERPAINT** £95.00



Big disc contract

NEWBURY Data has won a £1 million contract to supply 5.25in Winchester disc drives to a leading UK-based mass storage subsystem company, the Persol Group.

The contract is to supply high-performance disc drives with capacities up to 190Mb employing leading edge thin film technology.

Persol supplies the general original equipment manufacturer (OEM) and specific Apple PC markets around the world, particularly in Europe.

Preconfigured high-capacity Newbury disc drives are to be integrated into Symbfile subsystems specifically designed for the Macintosh and AppleTalk networks.



Derek Meakin and 149 fellow diggers attack the green field site of the new HQ

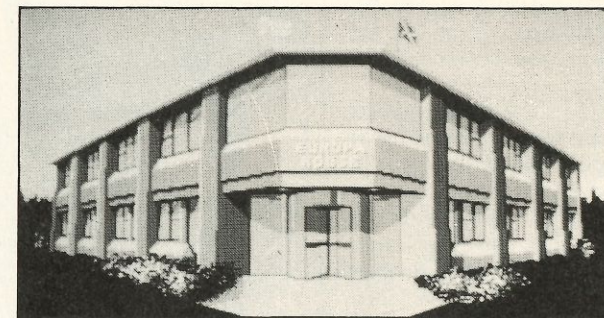
Digging for Database . . .

THE world's first mass sod-cutting ceremony heralded the start of building a new £1 million home for *Apple User* and its sister Database Publications magazines.

All 150 Database employees took part in the traditional act of groundbreaking to celebrate their role in the company's growth to prominence in computer magazine publishing.

The new site in the Cheshire countryside near Stockport echoed to the sound of scores of spades and shovels hitting the ground simultaneously at a signal from Database head Derek Meakin.

"We originally toyed with the idea of inviting a leading figure in



Computerised picture of the new building

the computer industry to perform the ceremony", he said, "but decided in the end to keep it within the company."

All our employees have contributed to Database becoming

the UK's leading publisher of computer magazines - so they all deserved to play a part on the big day."

The new headquarters is due for completion in November.

MicroLink comms boost

APPLE comms enthusiasts may soon be able to access Prestel's massive 300,000 page database through MicroLink.

British Telecom is merging the messaging services of Prestel and Telecom Gold, with which MicroLink is associated.

This will immediately create a 130,000-strong user base of micro owners able to exchange messages with each other.

Word Perfect arrives in the UK

US chart-topping Apple IIGS word processing software WordPerfect is now being sold in Britain.

Sentinel Software (0932-231164) will distribute the program which has column support, phonetic look-up dictionary and statistical typing operated by single keystroke commands.

The IIGS's colour capabilities are exploited too, to make such operations as underline and bold much clearer. Price £149.

Playboy goes online

REPORTS from the US say Macintosh owners are to be offered an online version of Playboy magazine.

The text and graphics service will be transmitted through selected Macintosh-specific BBSs and some commercial information systems including Compuserve.

New AppleWorks

A NEW version of AppleWorks has been released; the 2.0 is compatible with the Apple IIe, IIc and IIGS. It has a mail merge feature, and offers full use of the IIGS's expanded memory, auto loading of the whole program into ram, and increased word and record capacity. Price £175.

Radical Mac BB

A new "radical" bulletin board has been started in New York.

Called New York On-Line, it is run on a Macintosh with two disc drives and 300/1200 baud modem, and is available from the UK on 0101 718 852 2662.

Sysoy William Bowles said: "There are very few BBSs set up solely as places where progressive individuals can meet and exchange ideas and information on the effect processes such as de-skilling or automation are having on people and society."

"Settings for your modem should be full duplex, 300 or 1200 baud, 8 bit word length, 1 stop bit and no parity."

NYOL is up, for the most part, 24 hours a day, seven days a week."

WriteNow

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- Soft hyphenation
- Automatic backup file copies
- Alternating binding margins
- Tab indent left, indent right
- Left, centre, right, and arbitrary tabs
- "Keep on same Page" paragraphs
- Extended or condensed style options
- Date, time, and page no. anywhere on page
- Selective Font, size, and style changes
- "Identical paragraph" format changes
- Moveable ruler
- Fast, flicker-free, horizontal & vertical scrolling
- Cancel long operations mid-event
- Option to show non-printing characters
- Undo for ALL editing changes
- Not copy protected

... and it costs £165.00
Did we forget anything?

Introducing **WriteNow For Macintosh**, the next step in word processing for your Mac. **WriteNow For Macintosh** combines the power you would expect from a dedicated word processing system with the ease of operation that you're used to with **MacWrite™**. Word processing on the Mac will never be the same. Here's what Steve Jobs, creator of the Macintosh says about **WriteNow**: "This is the word processor we designed and built the Macintosh for." The wait is over. Right now.

The MacSerious Top 10

- 1 SuperPaint
- 2 WriteNow
- 3 Dark Castle
- 4 MacGolf
- 5 Lightspeed Pascal
- 6 Lightspeed C
- 7 TML Pascal
- 8 More
- 9 Mac3D
- 10 Silicon Press

The MacSerious Promise

We're dedicated to helping the serious or not too serious Mac user get hold of the software he or she needs ... and which no one else supplies this side of the Atlantic. If you can't find it elsewhere, try MacSerious. If we don't have it in stock, we'll get it for you if it exists.

The MacSerious Programmers Toolbox

LightSpeed Pascal £115
An interactive compiler and development environment for the Mac. You'll find all the convenient debugging features of Macintosh Pascal (also from Think Tech) but the interactive program is seamlessly integrated with a high-performance compiler, ultra-fast linker, and automatic project management.

LightSpeed C £160
A complete high-performance C programming environment providing in a single integrated Macintosh-style application, a multi-file text editor, high performance native code compiler, ultra-fast linker, and automatic make facility, as well as full Toolbox and Unix-compatibility library support. Complete implementation of the C language as defined by Kernighan & Ritchie's *The C Programming Language* plus more recent features.

LightSpeed C compiles more than 10 times faster than any other Mac C compiler. Generated code is between 70% & 90% of the size produced by other compilers, and execution time varies between 65% and 95%. Call for full details.

MacSerious & the Apple //GS

Yes, we now have software for the GS. Available today: **Visualizer //GS** (£95.00) Superb business graphics package taking full advantage of advanced features of the GS. Utilises AppleWorks data.

GraphicWriter (£140.00) Full powered WYSIWIG word-processor with built-in paint tools

PaintWorks Plus (£75.00) "Colour MacPaint" for the GS - and then some. With Paintworks Plus, you can make graphics come alive in animated sequences.

TML Pascal (APW) (£115.00, £140.00 w/ Source Code Library) Complete access to GS Tools; create stand alone applications. Please Note: These products will not work on other Apple II machines.

This is just the beginning. At MacSerious we look forward to bringing you many more exciting new products for this superb reincarnation of the classic Apple II computer.

Trapeze

The Spreadsheet without limits

Trapeze is a revolutionary program that frees you from the limitations of row and column spreadsheets. It was designed specifically for the Mac and takes full advantage of its speed, power and simplicity. Here's what Trapeze does...

Trapeze stores information in blocks; it does not lock you into a row & block prison. And you can move them freely around wherever you want, retaining the relationship between blocks. And it does it Fast...

Complex worksheets can be set up in minutes. Trapeze has fast, superious calculation speed, and it directly supports Levco's Prodigy 4™ and other 68881 maths coprocessors.

Power on Demand... Up to 32 worksheets open at once. Over 100 built-in functions. Create charts with 1000's of plots. And model size is limited only by memory.

Plus Things No Other Spreadsheet Can Do... Advanced operations, such as desktop engineering functions ranging from matrix operations to simultaneous equations. Multiple databases for efficient organization, analysis and presentation. Import graphics and text from paint, draw and word processing programs.

Trapeze costs £295.00

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MORE

The First Integrated Idea Processor/Idea Presenter
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 - Pattern Matching
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 - Text and Graphics Windows
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DTP DRIVE

A MAJOR public relations programme has been launched for PageMaker, the main product for the Apple desktop publishing system.

Behind the promotion is Aldus UK, a joint venture of US publisher Aldus Corporation and Edinburgh printer McQueen set up last year to market and support PageMaker.

The product has already passed the 50,000 sales mark and claims a 54 per cent share of the worldwide DTP market.

Aimed at increasing media and customer awareness of PageMaker, the new public relations campaign will be conducted by Ogilvy & Mather.



Two for the desk

DESK accessories SmartScrap and Clipper have been added to the list of desktop publishing aids for the Macintosh 512, Plus and XL.

The former allows libraries of logos, clip-art, phrases and such to be built up and the Clipper eases accurate sizing of text or pictures in the clipboard prior to pasting.

The two programs together occupy some 53k of disk space; but as SmartScrap is a replacement for Apple's Scrapbook this can be wiped, saving 3k.

Woz eyes the future

APPLE'S co-founder Steve Wozniak was one of a panel of computer gurus which provided a fascinating glimpse into the future recently. He was sharing centre stage with other big names from the early days of the industry at the West Coast Computer Fair in San Francisco.

All of them had been invited to take part in a think tank exercise to predict what changes are about to take place on the computer scene.

The end result was that they listed six technological developments which are likely to have the

most far reaching effects. They include:

Genlock or "frame grappler" techniques which will provide personal computers with the ability to directly manipulate television images — so moving computers into the heart of home entertainment systems.

A move towards "neural" computers that can "heal" themselves after hardware failures.

Further breakthroughs in semiconductivity which will lead to increasingly smaller and less expensive computers.

A "Santa Claus" machine

which can teleport material from one location to another. This, claim the experts, is nowhere near as bizarre as it may sound. Devices already exist that can replicate certain kinds of plastic shapes at remote sites.

A general shift towards a world of "programmable reality" where the difference between sophisticated simulations and real life has simply faded away.

The ability to link a human brain to a micro by a mind/computer interface, making the machine an infinitely powerful permanent extension of man.



THE latest in the nationwide network of AppleCentres has opened in Cannock, Staffordshire.

Formed as a partnership between Apple and Micro Business Centre, it will provide a specialist service to business and local government in the region.

AppleCentre West Midlands (05435 3663) will be run by Van and Marcia Taylor who started Micro Business Centre in 1980 and soon became an Apple dealership.

Two years later the business moved to larger premises in Wolverhampton city centre and its clients now include many multinational corporations based in the area, together with many local authorities and educational establishments.

Apple arts

NEW arts packages for the Apple IIGS have been released by Activision.

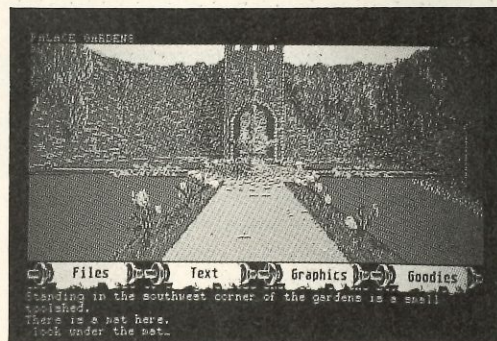
The Music Studio is a composition tool which features complete musical notation, advanced editing and high quality sheet music printouts with lyrics.

The "music paintbox" feature allows composition experiments to be put up on screen and played back immediately.

Used with a Midi interface, instruments' sounds and special effects can be created.

Paintworks Plus allows the mix and match of more than 4,000 colours with multiple brush sizes, shapes and patterns.

Activision (01-431 1101) says cut, paste, insert, rotate and detailed editing are also available along with a "lasso" feature which allows the movement of an image without modifying the background.



Five awards for the Pawn

BEST-SELLING adventure The Pawn for the Apple II has picked up no less than five awards from overseas computer journals.

Accolades for packaging, best graphics, most innovating computer design, entertainment program of the year and graphic adventure of the year came from results of readers' polls in France, Germany and the United States.

Ederyn Williams, general manager of Rainbird said: "We have shown that we are now right up there at the top, and 1987 should

be even better".

Meanwhile, in the UK, Rainbird (01-240 8838) has launched a follow-up to The Pawn for the Apple II and Macintosh.

Guild of Thieves is again set in the mystical land of Kerovnia and players must pass various tests in order to join the elite band.

Over 30 scenes are featured together with a comprehensive parser which allows multiple sentences of commands to be strung together. Price £19.95 for Apple II, £24.95 for Macintosh.



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The Gazelle

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Operating the File Control Unit

WE now move on to the third of our *Apple User* general purpose Units, the File Control Unit. Its purpose can be explained quite simply – the provision of facilities which enable user programs to perform all the operations offered by the system's Filer. However, to achieve this is not easy, as we shall see.

Before starting to look at the Unit, we need to consider a couple of the problems involved. The first is how we access disc directories. This was handled in our last tutorial series and should not prove too difficult.

The second is how we access data internal to the operating system. For example, how can our unit determine which volume is the root volume (that is, the name of the boot disc) and which the pre-fixed volume? This is much more difficult.

Also, I have worked on the principle that manually changing directories (by doing a unitread of the directory into a record and then changing the contents of that record) is a very hazardous process and should be avoided as far as possible. Getting the system itself to do so is far safer, and should be done wherever possible, even if this results in a more complex program.

Remember that the whole of the Apple Pascal system (except for the p-code interpreter and the input/output system in SYSTEM.APPLE) was written in Pascal, and then compiled. This is illustrated on page 256 of the Apple Pascal 1.1 OpSys manual.

Accessing variables

A user program is effectively a segment procedure of the operating system, as are the compiler or editor when they are running. In the same way that within a user program procedures can access variables declared within the main program, so it should be possible under certain conditions for the user program to access variables declared within the operating system.

Normally, of course, this is not permitted, as it is a very dangerous practice but it is possible. We can use the SU-compiler option to tell the compiler that it is compiling a system program, rather than a user program.

As page 68 of the 1.1 Language Manual states, this should not be used unless you

Part 7 of Stuart Bell's tutorial series covering the unitary approach to program development

know exactly what you are doing. A good description of the implications of this technique is given in *Advanced UCSD Pascal Programming Techniques* by Willner and Demchak (publisher Prentice Hall).

In summary, the effect is that we make our user program "look like" the operating system, so that it can access data which is normally private to the operating system. Dummy pseudo segment procedures are put into the file to simulate each segment within the operating system – for example the Filer.

Here we hit a problem; we cannot use segment procedures within Units. Hence, even if we can handle the dangers of the

SU- option, we cannot use this technique within our *Apple User* File Control Unit. Back to square one? Not quite, for we still need to access the data private to the operating system.

Before proceeding further, we need to consider the structure of the data within the operating system. We cannot look at the text files, because we don't have them; not surprisingly, Apple only supplies the code files to the system. However, the globals – the declarations at the top of the Pascal source code which is the UCSD operating system – have been released by various manufacturers.

Available globals

Strictly speaking, Apple has never released the globals of Apple Pascal. However, the University of California has made available those of version 11.0; a slightly earlier version of the p-System. But

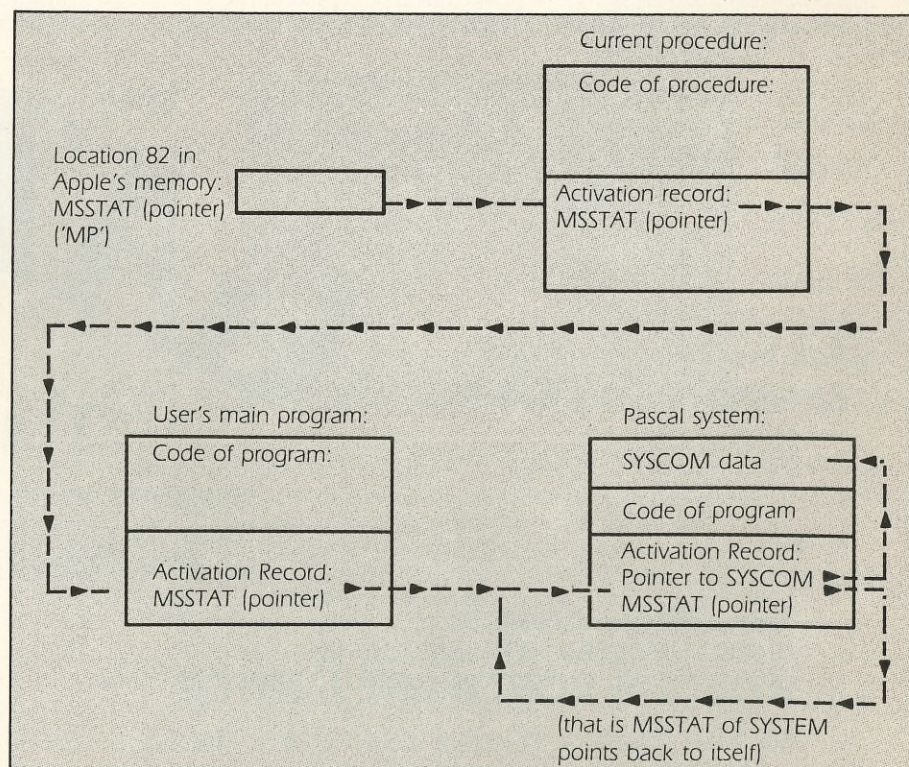


Diagram 1: Showing the following of 8 MSSTAT pointers in order to locate the MSSTAT of the operating system, and hence the SYSCOM data area

although those globals have been made available to user groups, they are not in the public domain and cannot be published in *Apple User*.

All is not lost, for the globals to a very early version (1.3) are public, and can be used for non-commercial uses. Hence I've started from the 1.3 globals and made the changes required to make the program work under Apple Pascal.

So, we know the structure of the data within the operating system which we wish to access. But, how do we access it without the use of the SU- compiler option? User programs cannot directly access system variables.

Two-part code

Consider Diagram 1. This shows the structure of the p-System when it is running a user program. Each piece of code has two parts: The code itself and an "activation record", which contains house-keeping information about that procedure. Full details are given on pages 256-264 of the 1.1 OpSys manual.

The key variable within the activation record is the MarkStack STATIC link field (MSSTAT). Don't worry about the name; the point is that each procedure has one, and that each procedure's MSSTAT points to the MSSTAT of the procedure which called it.

Following chain

Thus we have a chain of pointers, as shown in Diagram 1. If we follow the chain from the current procedure, we shall eventually work our way into the operating system, within the activation record of which are the variables which we wish to access.

Two points remain; we know that we have reached the end of the chain when we find an MSSTAT which points to itself. This is the "main program" of the Apple Pascal OS. The beginning of the chain is pointed to by the Markstat pointer ('MP'), which is a p-machine register stored at location 82 within the Apple's memory map.

Thus if we peek the pointer at 82, then follow the chain until a pointer is found

which points to itself, we can find the system's activation record and get the data we need. In Listing 1 the procedure getsyscom does just this.

This neat technique was first suggested by John Stokes in *Perfect Pascal Programs* (ed. Robert Platt, published by TAB Books).

To illustrate the use of the system globals, and of this technique of finding them, the program Tryit in Listing 1 prints out the current date, volumes online on your system, their sizes and the maximum space on each disc.

To avoid any confusion over what has been used from the public domain version 1.3 globals and what I have written, the former material has been left in UPPER CASE; my stuff is in lower case. Obviously, you need not bother about this when typing it in.

● Next month we'll look in detail at Tryit, and see how it works.

This and the next four articles contain a lot of code, so to ease the fingers we are offering a service. If you send in a 5.25in disc and SAE we will copy the text files for you. Send your discs to Max Parrott at 68 Chester Road, Stockport SK7 5NY.

```
PROGRAM tryit;
(* demonstrates use of globals, syscom, and access to file information
blocks. Works with Apple Pascal 1.1, 1.2, 1.3. Will need some swapping,
either as a compiler option, or at system level, with 1.2 and 1.3,
depending on configuration.*)

CONST MAXUNIT = 12;
MAXDIR = 77;
VIDLENG = 7;
TIDLENG = 15;
FBLKSIZE = 512;
DIRBLK = 2;
EOL = 13;

(* the following are offsets within the operating system globals:*)
infooffset = 14;
syvidoffset = 124;
dkvidoffset = 116;
thedataoffset = 132;
unitaboffset = 250;

TYPE DATAREC = PACKED RECORD
    MONTH: 0..12;
    DAY: 0..31;
    YEAR: 0..100 (*100 IS TEMP DISK FLAG*);
END (*DATAREC*);

UNITNUM = 0..MAXUNIT;
VID = STRING(VIDLENG);
DIRRANGE = 0..MAXDIR;
TID = STRING(TIDLENG);

FILEKIND = (UNTYPEFILE, XDSCFILE, CODEFILE, TEXTFILE,
    INFOFILE, DATAFILE, GRAFFILE, POTOFILE);

DIRENTRY = RECORD
    DFIRSTBLK: INTEGER;
    DLASTBLK: INTEGER;
    CASE DFKIND: FILEKIND OF
        UNTYPEFILE:
            (DVID: VID;
             DEOVBK: INTEGER;
             DNUMFILES: DIRRANGE;
             DLOADTIME: INTEGER);
        XDSCFILE, CODEFILE, TEXTFILE, INFOFILE,
        DATAFILE, GRAFFILE, POTOFILE:
            (DTID: TID;
```

```
            DLASTBYTE: 1..FBLKSIZE;
            DACCESS: DATAREC);
END;

DIRP = 'DIRECTORY';
DIRECTORY = ARRAY (DIRRANGE) OF DIRENTRY;

INFOREC = RECORD
    infofill: array[0..4] of integer;
    fillbool1, fillbool2: BOOLEAN;
    fillchar: char;
    GOTSYM, GOTCODE: BOOLEAN;
    WORKVID, SYMVID, CODEVID: VID;
    WORKTID, SYMTID, CODETID: TID;
END;

SYSCOMREC = RECORD
    IORSLT: integer; (* was loresultwd *)
    fillzz: INTEGER;
    SYSUNIT: UNITNUM;
    fillxx: INTEGER;
    GDIRP: DIRP;
    (* syscomrec is much larger - rest not used *)
END;

UNITAB = record
    uarray: ARRAY (UNITNUM) OF (*0 NOT USED*)
        RECORD
            UVID: VID;
            CASE UISBLKD: BOOLEAN OF
                TRUE: (UEOVBK: INTEGER);
            END;
        end;
end;

datatype = record case integer of
    1: (addr: integer);
    2: (ptr: 'datarec');
end;

infotype = record case integer of
    1: (addr: integer);
    2: (ptr: 'inforec');
end;

unitttype = record case integer of
    1: (addr: integer);
    2: (ptr: 'unitab');
end;
```



```

VAR userinfo: Infotype;
SYVID, DKVID: VID;
syscom: Integer;
thedata: datatype;
unitable: unittype;
l: Integer;
arry: array[0..0] of Integer;
volno: string[2];
fn: string[12];
f: file of char; (* dummy file used to make system
go for disc directories ! *)
largespace: array[4..12] of Integer;
fibarea: array[0..17] of Integer;
lsyscom: Integer[7];

procedure getsyscom;
const markpointer = 82; (*MP in zero page *)
type mscwd = record
msstat: ^mscwr (* rest of record irrelevant *)
end;
var trailpoint: record case Integer of
1: (loc: Integer);
2: (ptr: ^Integer);
end;
maptr: record case Integer of
1: (ptr: ^mscwr);
2: (addr: Integer);
3: (number: ^Integer);
end;
begin (* getsyscom *)
trailpoint.loc := markpointer; (* start at first Markstack *)
maptr.addr := trailpoint.ptr;
while maptr.number <> maptr.addr do
maptr.ptr := maptr.ptr.mstat;
trailpoint.loc := maptr.addr;
syscom := trailpoint.ptr + 12; (* 12 is offset over MSCWD *)
(* now make positive in range 0..65535 *)
if syscom > 0 then lsyscom := syscom
else lsyscom := 65536 + syscom
end; (* main program *)
end; (* getsyscom *)

begin (* main program *)
getsyscom;
page(output);
writeln('Apple User File Control Unit, Introductory Program:');
writeln: writeln('Syscom is at ', lsyscom);
thedata.addr := syscom + thedataoffset;
with thedata.ptr do
writeln('Today is: ', day, '/', month, '/', year);
userinfo.addr := syscom + userinfooffset;
unitable.addr := syscom + unitaboffset;
(*$1- *)
for l := 1 to maxunit do
if unitable.ptr.uarray[l].ulbld then
begin
str(i, volno);
fn := concat('f', volno, 'dummy');
rewrite(f, fn);
if lresult = 0 then begin
moveleft(f, fibarea, 36);
largespace[l] := (fibarea[17] - fibarea[16]);
end
else largespace[l] := 0;
close(f, purge);
end;
(*$1+ *)
with unitable.ptr do
begin
writeln: writeln('Volumes on-line:');
writeln('No Name Size Largest Space'); writeln;
for l := 1 to maxunit do
with uarray[l] do
begin
write(i, 2);
if length(uvid) = 0 then writeln
else begin
write(' ', uvid);
if ulbld then writeln(' ', 12 - length(uvid), uovblk: 4,
largespace[l]: 14);
end;
end;
end;
end;
end; (* main program *)

```

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Product: Prince
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 Price: £49.99
 Requirements: Apple II with 64k
 Supplier: MGA Microsystems, 140 High
 Street, Tenterden, Kent TN30 6HT.
 Tel: 05806 4278

Ribbons to bring your pictures to life

I NEVER thought I'd be asked to review a printer ribbon, much less a box of four ribbons. To be fair, Prince – as in "Some day my prints will come" – is a little more than four ribbons, but they form the basis of the package.

The idea is to produce colour prints from your ordinary dot matrix printer. This is done by multiple passes over the paper, using a different coloured ribbon for each pass in order to build up the coloured image.

The obvious difficulty with this technique is that each pass must be perfectly aligned or the result is less than satisfactory. Professional printers usually go to great lengths to ensure the alignment of different colours, and the strange pictures which graced early issues of Today show the difficulties involved.

How well Prince works must depend to some extent on your printer. As its mechanical parts start to wear, the chances of accurately aligning successive passes must become less. My ImageWriter has seen a fair bit of service in the last couple of years, but doesn't show any major signs of wear in normal printing, so should be a reasonable test.

Once you're ready to print you're prompted to put the first ribbon in the printer and press Return. After each pass you're prompted to change the ribbon, the colour being specified each time.

This is the case for printers like the ImageWriter which have a reverse line feed facility. The program automatically winds them back to the start position each time.

If you have a printer which doesn't have this facility (like the Epson RX-80, for example) you must make a mark on the paper at the start and manually wind back to this point after each pass. The potential for mis-registration would seem to be quite large in this case, and I was glad that the ImageWriter supported reverse line feeds.

At times the registration was near perfect, but at others a certain amount of mismatch was noticeable. This was particularly the case when printing out large pictures, as you'd expect.

Some colours were better than others, too. For example, reds and browns came out quite well, dark blues were reasonable, but greens (like the dinosaur in the sample picture) were not very good.

Any hi-res or double hi-res screen can be printed, and the manual also tells you how you might go about capturing screens from games.

The technique is an old one and relies on the fact that pressing Control-Reset in the middle of a game often forces a reboot without disrupting the hi-res screen.

I have a normal Dos disc that I save screens to, but you can use the Prince disc

as the reboot disc and deal directly with the picture.

Incidentally, if you're saving the screens to disc first, make use of my favourite Call command, CALL -3100. This displays hi-res screen 1, and if your picture isn't there, then POKE -16299,0. This displays hi-res screen 2. If your picture is in screen 1, you can save it with BSAVE <filename>, AS2000, LS2000 and if it's in screen 2 use AS4000 instead.

Prince will let you edit the pictures, crop them, add text and so forth. It will also let you print the picture as a transfer, reversing all the text so that it's the right way around when you iron it on to your T shirt. Any paper will do for a transfer – the secret's in the special heat-transfer ribbons.

If you want to replace them, the ribbons cost around £12.95, so four will set you back £51.80, which is more than the cost of Prince. In other words, it's cheaper to buy another complete pack than replace the

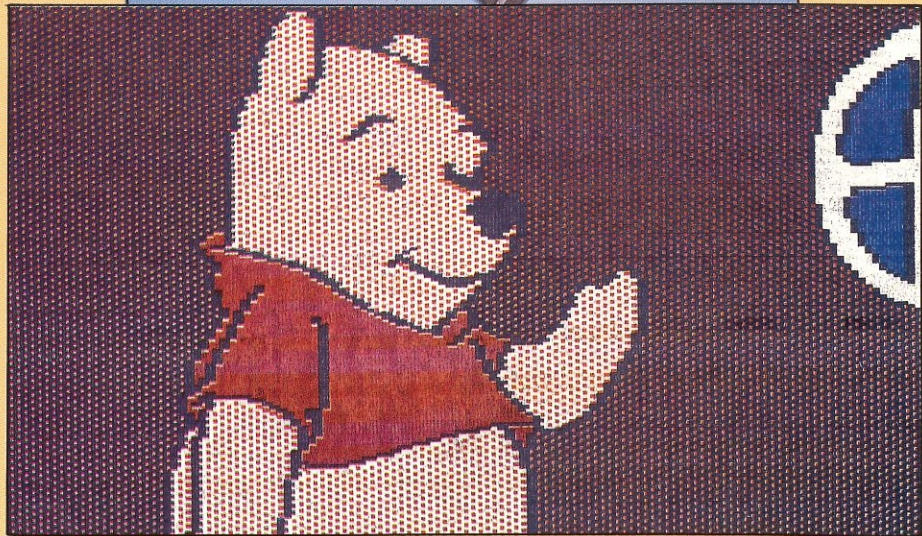
ribbons. Of course, if you only want coloured pictures and not transfers you can buy ordinary coloured ribbons at about £4.19 each.

As I mentioned earlier, the pack contains more than just the ribbons. There's also the double-sided disc and manual, some coloured paper and envelopes, some long labels for making bumper stickers, and a piece of cloth for trying a transfer on.

I had no trouble running Prince on my ILC. Selecting this computer in the set-up menu automatically defined the printer interface and slot. I tried running it from my //e but ran into difficulties with the printer interface.

I have an ImageWriter version of the Fingerprint card which normally works fine (and has its own interrupt facility).

However, although the Fingerprint was listed as an option, it refused to print and sent the printer into an endless loop of handshaking. Various parallel and serial



cards are listed on the menu, but in view of the problem I had you should confirm that your card is supported if you're thinking of buying the package.

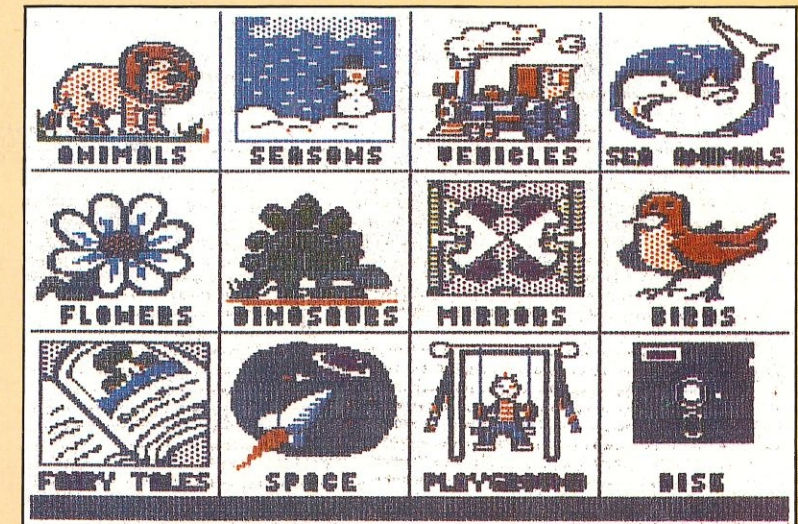
One of the interface options is "user setup" but choosing this doesn't seem to lead anywhere. There didn't seem to be a facility to say what the setup actually was, unless it was buried deep within the menu structure. If it was, I never found it, despite looking several times.

Most of the time Prince uses preset parameters and offers you simple menu choices. However, once you've gained some confidence you can use the Expert mode and adjust the 18 different print parameters, allowing you to rotate the image, repeat it across the page, stretch it horizontally or vertically and so forth.

Changing the ribbon on an ImageWriter is not particularly difficult since they come in fairly compact cartridges. It's a bit messier on an Epson where you've got the long length of ribbon exposed.

The ImageWriter version of Prince is also suitable for the DMP, C.Itoh 8510/Prowriter, 8510SC and NEC 8023. The Epson version is suitable for the MX, FX and RX 80s and 100s and also the JX-80.

If you've got an ImageWriter II, Epson JX-80 or Prowriter 8510SC, which use a



multi-coloured ribbon, Prince will automatically take account of this when printing. Of course the multi-coloured ribbons aren't of the heat transfer kind, so you couldn't make transfers with them. If you really want transfers, you must drive your printer in black-and-white mode and change ribbons manually.

If you're desperate to print in colour, Prince will certainly do the job after a fash-

ion. If you intend printing mostly on paper I'd recommend buying ordinary coloured ribbons at the same time and saving the heat transfer ones specifically for transfers.

My kids certainly enjoyed seeing their favourite screens printed in colour, but at around £57 Prince is a luxury I would hesitate to use except for special occasions.

Dave Russell

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 Road, Doncaster DN2 4AD.
 Tel: 0302 21134

ONE of the best things about Football Fortunes is that you don't even have to like or understand football to enjoy it. It helps of course, but if you enjoy Monopoly, then you should get a kick out of this one.

It is in no way an arcade type of simulation, but a computer interactive board game on the theme of soccer management, aiming for success on the field and in the bank.

The pack includes the program disc, a well designed if rather flimsy board, player cards, bank notes, counters and clearly laid out instructions.

Football Fortunes is for two to five players, although one person can play quite acceptably, controlling two teams.

Each player types in his or her name and chooses a team to manage. There is a choice of 10 first division sides, but any other team can be nominated, even an amateur or school side.

The computer then allocates 11 player

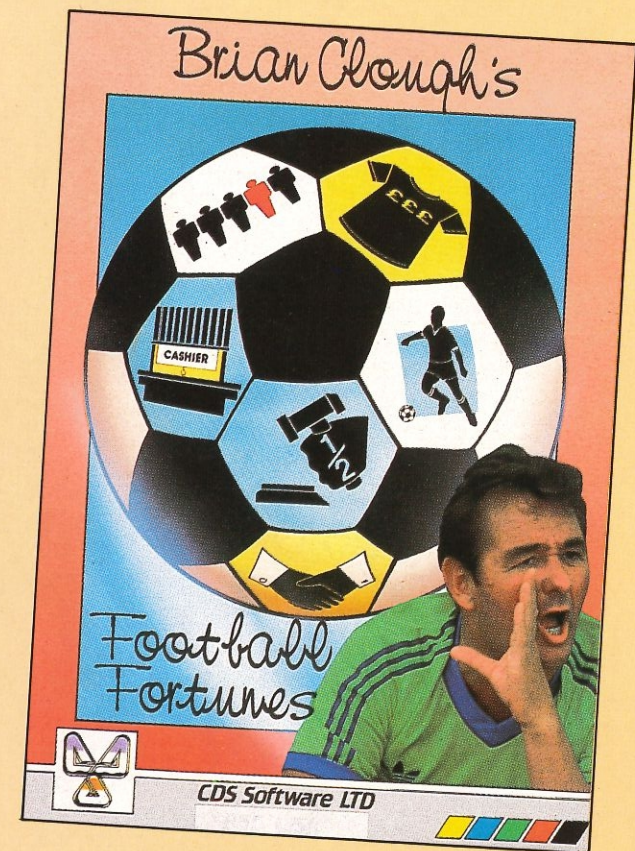
cards and two substitutes to each team, each having a nominal value of between one and five points.

The team is divided into attack and defence, both sections having a strength determined by their total player values. These values will directly affect the results of matches.

Players "throw" the computer die and move accordingly. There are possibilities for

player auctions, increasing attack and defence ratings, selection problems, sponsorship, manager's luck (good and bad), loans, transfers, injuries, wage demands and so on.

The team strengths are reassessed and entered into the computer, which determines the match results. These then come through on the teleprinter, the gate money is allocated and the league table ▶



◁ formulated.

Matches are generally decided by team strength, but there can be upsets. As managers often say on the box: "There's nothing certain in football".

There are nine matches to the season and tension is certainly generated as it progresses. There is also the FA Cup to play for

and, in subsequent seasons, European competitions.

Points are allocated according to your team's position in the league, its progress through the cup competitions, and money held. The winner, naturally enough, is the player with most game points at the end of an agreed number of seasons.

CDS has come up with a great game and presented it really well. It couldn't work as well purely as a board game, and it would lose something for being micro-only.

The balance achieved is just right, making for a great family game – and no crowd trouble.

Niels Reynolds

Infocom stars in Hollywood

Program: *Hollywood Hijinx*

Price: £24.99

Supplier: Infocom c/o Activision, 23 Pond Street, Hampstead, London, NW3 2PN
Tel: 01 431 1101

DO you remember these classic B movies?: Meltdown On Elm Street, It Came From The Neighbour's House, Vampire Penguins, A Corpse Line, The Seven Dwarves Do Dallas?

And what about that famous series featuring the all-American fighting mailman, Buck Palace? Who could forget Postage Due, where Buck took on five New York Mafia families who tried to cheat the Post Office out of eight cents postage?

And Address Unknown in which Buck tracked down and rescued some US POWs still held in Vietnam, returning them to safety by mailing them to the Pentagon disguised as parcels. Surely you recall these Hollywood hits?

No? Well, I can't say I'm surprised. Art they ain't. These masterpieces of cinematic slush have all sprung from the fertile

imaginations of those adventure experts over at Infocom.

According to their very latest text adventure, *Hollywood Hijinx*, these and many other successful, low budget pot boilers were all produced by your uncle, the one and only Buddy Burbank of Hollywood.

Many's the happy time you spent as a child with your uncle and his wife, your Aunt Hildegard, down on their luxurious ocean-front mansion at Malibu. The only fly in the ointment was another regular visitor, little cousin Herman, as mischievous and precocious a brat as you could ever wish to kick up the pants.

Sad to say, Uncle Buddy passed away a while back and now Aunt Hildegard has shuffled off this mortal coil to join him.

They were both very fond of you. In fact, you were their favourite nephew and Auntie has therefore left everything to you in her will... on one condition (where there's an Infocom will, there's always a catch).

The stipulation is this: In order to inherit the Burbank bundle, you've got to find – within 12 hours – 10 "treasures" that have been hidden in the Malibu house and

grounds. The treasures take the form of memorabilia lifted straight from the sets of some of Buddy's old films.

Now some say the place is haunted but you know better. Uncle Buddy loved nothing more than to fill the place with outlandish booby traps, goofy gags and kitsch of the most excruciating kind. I know for a fact that there's a private screening room, and the gold-plated taps in the bathroom are shaped like Oscars.

The game begins with you being dumped outside the house, armed with a photo of Buddy, a letter from your aunt and a flashlight. A copy of the letter and photo come with the package, which is as sumptuously presented as only Infocom knows how.

Included with the package are a copy of *Tinsel World*, a glossy gossip magazine that gives you the low down on the characters and locations featured in the game, and a lucky palm tree swizzle stick.

On the back of the photo, Buddy has scrawled some weird, home-spun verses which he hopes will give you a few clues. I guess these are only going to begin to make some sense when you're well into the game.

At the entrance to the house and grounds is an imposing stone statue of Buck Palace, the fighting mailman, showing him armed to the teeth and ready for action. His shoulder-high bazooka is pointing north.

The oak front door is locked, as is the patio door, and there seems no obvious way to gain entry to the house. The mailbox opens up easily enough, though, revealing a yellowing piece of paper that looks like a map of some kind, a business card and a copy of *Status Line* (the latter being really a plug for Infocom's new newsletter, formerly called the *New York Times*).

The gardens are attractive and a cursory exploration reveals a small shovel and an orange punched card. Hmmm. Don't know what the pond is for though. Wonder what would happen if I throw the yellowing piece of paper in it?

That weedy-looking rose bush draws attention to itself. Wonder what it smells like? Yukkk! You now recall that it's the very same one you were sick on when you once played here as a child!

Still can't get into the house. What's this cannon with a fuse sticking out? Aha! There's a small compartment under one of the wheels. A quick push and ...dam! Can't

shift the cannon – it's too heavy. A quick walk down the cliff path and, hooray, someone's left a ladder here. Great! Just cart it up the cliff and ... dam. It's too heavy and I just keep sliding back down when I try to carry it up.

But what's this? A hatch. Dam, it won't open. Ah well, let's try a walk around the hedge maze. Oh crumbs, I wish I hadn't. This maze is enormous. No good trying to map it out by the tried and trusted method of dropping objects; for this maze you'd need more objects than are contained in all the Infocom games put together. There must be an easier way.

Accent on high speed arcade action

Program: *Starglider*

Price: £24.95

Supplier: Rainbird, Wellington House, Upper St. Martin's Lane, London, WC2H 9DL
Tel: 01-240 8838

STARGLIDER is a new arcade game from Rainbird, part of British Telecom's software division.

In the distant future the remote planet of Novenia has been overrun by the evil Ergon horde. You are the pilot of an Airborne Ground Attack Vehicle – AGAV for short – and your aim is to single-handedly blow the invaders back whence they came.

It's a daunting task because fuel and ammunition are limited and the planet is teeming with hostile war machines. Villain of the piece is the wing-flapping *Starglider One* piloted by intergalactic anti-hero Hermann Kruud.

He's aided and abetted by laser bases, missile launchers, tanks, stompers and a host of others whose sole purpose in life is to turn you into so much cooked meat or, in my case, fried chicken.

All are portrayed in state of the art vector graphics with full hidden line removal. Surrounding the viewer are instruments showing your coordinates, laser status, shield strength, fuel level, height and speed.

There's also radar so you can identify enemy ships and missiles as they home in on you.

The action can be fast and furious, so it's fortunate that refuge can be sought in the silos. Here you can replenish missiles, lasers and shields.

When docked with a silo you can interrogate the computer system and see a

Hello, what's this? I could have sworn the bazooka on the statue was pointing north when I arrived. Curiouser and curiouser. Just time now for a brisk walk down these rickety wooden steps to the beach. Dam, there's a gap here. Shall I try to jump it or shan't I? Oh, go on, be a devil. Fade to black and cut!

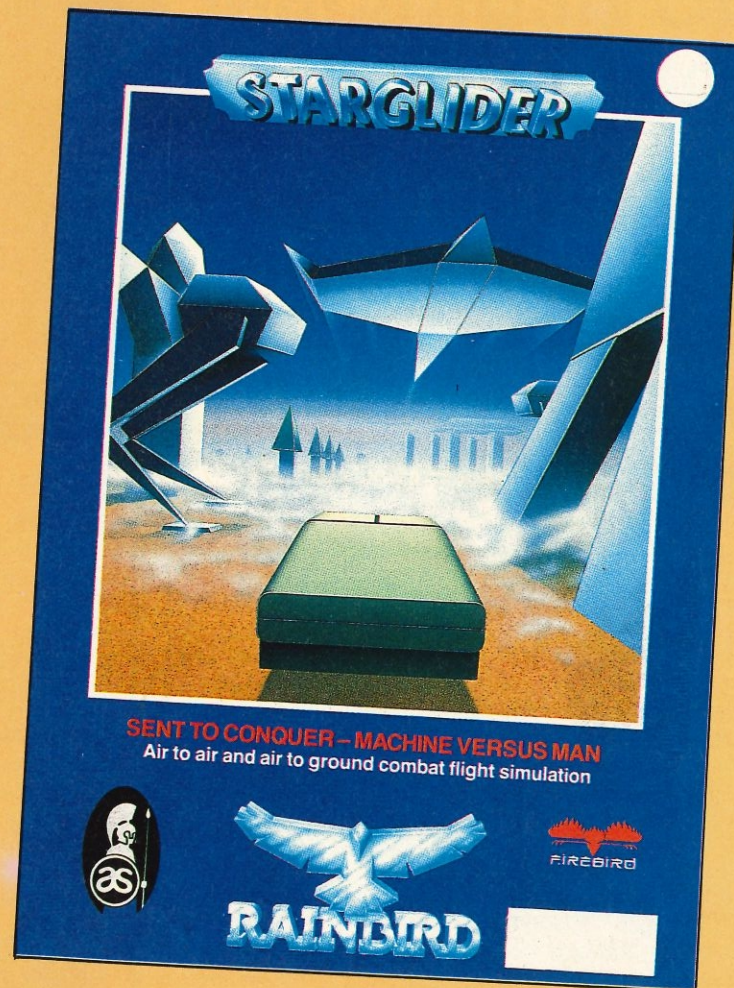
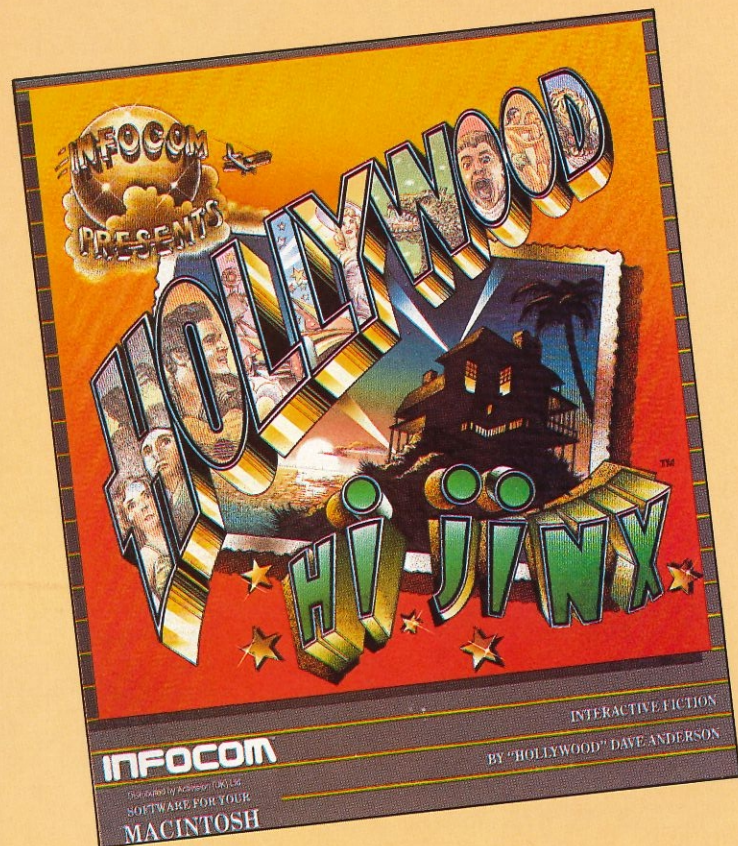
It did take a while, but I finally got into the house but I've hit another brick wall as it were. Yes, Infocom has ensnared, baffled, entertained and frustrated me yet again.

I have only one small gripe: The command parser doesn't seem to be quite as tolerant as usual. I found it a little

annoying when in the maze to be met with the response "With what" every time I tried to dig the ground, even though the only digging implement I had was a shovel – Infocom usually takes that sort of thing for granted.

But enough of this nit picking. Without a shadow of doubt, *Hollywood Hijinx* is another excellent Infocom adventure and can be confidently recommended to players new to adventures and particularly to all fans of this company's immaculate products. Music to crescendo and roll the credits.

Bob Chappell



rogues gallery of the opposition, with details of strength and armaments.

Occasionally you will be given a special mission to collect a super missile, rear view scanner or other item of equipment.

Refuelling isn't quite so easy, because if you aren't lucky enough to find an inductive energy unit you have to perform a tricky low-level manoeuvre involving a power line and some very solid-looking towers.

If you survive to accumulate enough points you progress to the next level where an even greater number of Ergons are busy being twice as mean as before.

There's more to *Starglider* than blasting everything in sight. Getting further than level two requires a strategic approach, not

to mention finely-tuned reflexes.

Packaged with the disc is a player's guide, a poster and a 64 page novella – science fiction fans won't be nominating it for any awards, but it does contain lots of background information, clues and hints.

Sound effects are quite good, especially the explosions, but they could have been better. The Mockingboard is not supported.

It can be driven with the keyboard, and an option to redefine the keys makes control fairly easy, but one of the two methods of joystick control is most likely to suit.

At a price of £19.95, or £14.95 through *Apple User*, this game is a must for any avid arcade game player.

Ian Sharpe

Do you feel lucky, punk?

Program: The King of Chicago
Price: £45.95
Supplier: Mindscape, c/o Mirrorsoft, Maxwell House, 74 Worship Street, London EC2A 2EN.
Requirements: MacPlus or 512E with 128k rom; 800k drive

I WAS weaned on Elliot Ness and the Untouchables, Legs Diamond, Ma Barker, Pretty Boy Floyd and the rest of them, so I greeted the arrival of The King of Chicago with enthusiasm.

And on first sight it looked promising: The box sleeve features, as you can see, a fishnet-stocking moll hiding behind a typewriter-wielding hood. And he's clad in obligatory pinstripe and immaculate spats – all very authentic. So far so good.

The packaging is sturdy, and the enclosed booklet informative if thin – six pages of historical background and as many of game notes. There are two pages of designer notes as well, which make for interesting reading.

We're firmly in the era of Capone. Well, immediate post-Capone to be precise – he's just been sent down for being a little less than scrupulous with his tax declarations. And somebody's got to take over.

Apparently King was conceived as part of a range of Cinemaware – interactive movies created by a programming buff with a taste for old celluloid. These are aimed at "the mature player looking for greater challenges and a more adult experience."

Hmm. Interactive movies in my day meant taking a cap-gun to the Saturday morning cowboy film at the fleapit.

Certainly, interaction couldn't be easier. Getting started is almost as simple as booting up, and the game is menu-driven, with options for sound on/off and pause.

Your input is via the mouse only (though a fly replaces the ubiquitous arrow) and limited largely to choosing one of several courses of action – though you can speed things up a little and occasionally take potshots at other characters.

You take the role of Pinky (shades of Brighton Rock?) who's set his heart on taking over the kingdom of Chicago – which means disposing of the Old Man, the current wearer of the crown, and grabbing territory one chunk at a time.

You'll be aided (and hindered) by a variety of stereotypes including aides of dubious loyalty, a bent politician – the aptly named Alderman Burke, an honest cop, a greedy moll and a heartbroken momma.

Is this just another adventure? Not quite, for the backgrounds and text are largely incidental; all the programming effort here has gone into graphics and logical processing.

All the characters actually appear on-screen, hence the Cinemaware label. Generally this means face only – and sadly,

it doesn't work well enough to hold the interest. The game's designer maintains that he concentrated on the faces, but all he seems to have achieved is moving eyes and occasionally shuffling jaws or 90 degree shifts. And I'd guess that King Edwards were used as models.

Certainly little effort has been put into the backgrounds and sound effects, though some are quite evocative – a Sting-like intro and "Momma's tune" in particular.

Exceptions are the between scenes titles, which nicely convey the flavour of the time: "Behind every successful gangster there's a bloodthirsty woman", "He was just a punk in a hurry with more gun than brains" and "The butcher with the sharpest knife has the warmest heart" are fairly typical. Unfortunately, though, the scenes take a fair while to load.

The plot unravels as Pinky spreads his wings, getting rid of his old boss, taking over the gang, muscling into enemy territory. There's always two – sometimes more – ways to do things and you choose. This is where the interaction comes in.

Choices appear as thought balloons over Pinky's head and one thing, as ever, can lead to another. As a general rule though, being wary of extremes will help you live a lot longer – and let you see some of the more robust dialogue in the option boxes.

Generally, options are to fight, bully, cajole or knuckle under, but sticking to one can be disastrous. Certainly don't trust to Pinky's own gun-handling ability for survival – he's scarcely in the Rolf Harris

class when it comes to being quick on the draw, and the mouse isn't the easiest gun to bring to bear.

You'll soon find yourself developing a pattern for your own continued health; check on the finances, check on the boys in the gang, make a minor move and see what happens.

You can add keeping Lola, the greedy moll happy to that list. But that seems fairly unproductive as she only seems to whine regardless of what you give her. A definite candidate for a cement overcoat.

You'll find Mom popping up to weep and wail at her erring son occasionally too – another one for the Lola treatment.

Despite all the permutations possible, certain patterns seem inevitable and predictable, and scenes called up from memory don't always quite fit into the context. It can be quite disconcerting to fly off at a familiar tangent when you think you're breaking new ground.

That said, it kept me happily engaged for a couple of hours, until I found that by playing Mr Average I could survive until the bitter end – I'd already discovered that random answers led to an early and often unexpected demise.

I had expected more; more lively graphics, more movement, more sound, more imagination.

And after all the advertised excitement that was a bit of a let down. If this had been true Cinemaware I'm afraid they'd have found me leaving at the interval.

W. F. Wilberforce



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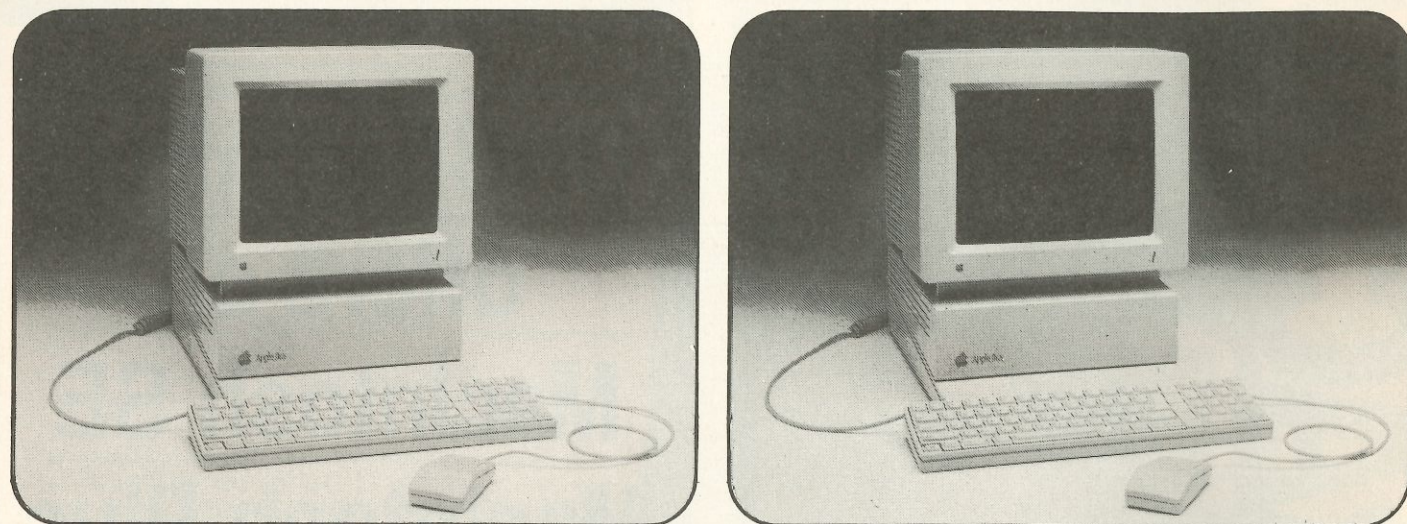
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BDOS function calls

Colin Foster looks
at non-disc calls
in Part Seven of
his CP/M series

LET'S have a detailed look at the 13 BDOS function calls which CP/M 2 provides to carry out simple input and output operations. There are also a larger number of more powerful function calls available which deal with disc operations, but we'll deal with them next month.

Last month we used function number 2, Console Input, as an example to demonstrate the way we make a function call. This simply involves loading register C with the function number, loading register D (or register pair DE) with any information the BDOS requires and executing a CALL 0005 instruction.

Any result is normally passed back to the caller in either register A or register pair HL when the function call returns control to the calling program. This system is the same for all BDOS function calls.

The first function System Reset which only requires function number 0 in register C and which returns nothing. It is rarely used because its effect is identical to executing a CALL 000h or RST 00h instruction, either of which is quicker and easier to do. All three alternatives will abort any program which is running, reload the CCP and BDOS from disc and return to the CCP command level which is the A) prompt.

Console Input requires function number 1 in register C and returns to us the Ascii value of the next character read from the logical CON: device in register A. The CON device is normally the keyboard. If the character is printable, or is a carriage return, line-feed or backspace, it is echoed to the screen.

A tab (^) moves the cursor to the next tab position on the screen – tab positions exist at every eighth column. The BDOS will wait until a character is typed at the keyboard before returning control to the calling program.

Console Output requires function number 2 in register C and the Ascii value of the character we wish to send to the logical device CON:, normally the screen, in register E.

As with function 1 tabs are expanded to columns of eight characters. Also the BDOS checks to see whether 'S' has been typed on the keyboard. If 'S' has been typed, CP/M temporarily halts the execution of the running program just like Applesoft Basic, so if you are outputting a lot of information to the screen you can pause to give yourself a chance to read it.

Once 'S' has been pressed you can do two things. Pressing 'C' will abort the program and return you to the CCP while pressing any other key will resume execution of the program.

Something which causes a great deal of confusion in CP/M is the printer echo facil-

ity. Function 10, which is Buffered Input described below, will accept 'P' from the keyboard and use it to set or reset the printer echo toggle flag in the BDOS.

If set, this flag causes all characters printed on the screen to be sent also to the LST: device which is normally the printer card in slot 1 of your Apple. All the functions which either print or echo characters on the screen (1,2,9 and 10) check the flag and echo to the printer is appropriate. However, only function 10 will read the 'P' command from the keyboard to alter the state of the flag.

I have read several books which state that other functions will also do this under CP/M2.2. Probably they base this on the Digital Research manuals which are themselves ambiguous on the point – but they are wrong. CP/M (version 3) is smarter in this respect, as in many others.

Reader Input requires only function number 3 in register C and returns the character read from the logical RDR device. This is normally assigned to the serial card in slot 2, used perhaps for a modem. Characters read by this function are not echoed to the screen and the function does not return until a character has been received.

Punch Output requires function number 4 in register C and the Ascii value of the character to be sent in register E. The character is sent to the logical device PUN: which is normally assigned to a serial card in slot 2. Unlike Console Output no checks are made for pause or abort commands from the keyboard.

List Output requires function number 5 in register C and the Ascii value of the character to be printed in register E. This character is sent to the logical device LST:, normally the printer card in slot 1. Again no checks are made for keyboard input.

Direct Console I/O is where things start

getting a bit more complicated. This function can be used to let us check the keyboard to see whether a character has been typed, to input a character from the keyboard or to print one on the screen. In all cases we must call it with function number 6 in register C.

If we wish to print a character on the screen we must also put the Ascii code for the character in register E, just as for the normal Console Output function. However, this one does not check for pause or abort commands from the keyboard.

To read from the keyboard we must call the function with the value FFh in register E. It then checks to see whether a character has been typed and if so returns it in register A, just like the normal Console Input function.

However, if a character is not ready it will return immediately but with the value 00h, and Ascii null character, in register A. Unlike the normal Console Input this function does not wait until a character has been typed before returning.

This function is extremely useful if we wish to occasionally check for input, for example an abort command, while doing something else. If we used the normal Console Input for this our main program would stop until a key was pressed.

Set IOBYTE requires only the function number in register C and returns the current value of the IOBYTE bit field in register A. This is a particularly useless function as the IOBYTE is always found at address 3 of the SPA in any CP/M systems so we may just as well pick it up directly with an instruction such as:

LD A,(0003) (Z80)

or

LDA 0003 (8080)

which is all the BDOS does anyway, without going through the rigmarole of a function call. The function was originally provided for compatibility with early versions of CP/M which did not support the IOBYTE concept, but nowadays it is redundant.

Set IOBYTE is the companion to Get IOBYTE and is equally useless. Again, if the

(DE) :+0	+1	+2	+3	+4	+5	...	+max
lmaxl	lnuml	lch1l	lch2l	lch3l	lch4l	l...l	l???l
max = maximum number of characters to be read							
num = actual number of characters read							
ch1, ch2, etc = characters read							
??? = character if num=max else unused if num<max							

Figure 1: Structure of the Console Input Buffer

◁ new pattern is in register E, it can be replaced simply by an instruction such as

```
LD A,E (280) LD (0003),A
```

or

```
MOV A,E (8080) STA 0003
```

If you really want to use the function you need function number 8 in register C and the new pattern for the IOBYTE in register E. It returns nothing.

Print String is extremely useful and requires function number 9 in register C and the memory address of the string of characters in register pair DE.

The function takes the string of Ascii characters, starting at address DE and terminating with the character \$, and prints it on the logical CON: device which is normally the screen. As it works internally by calling Console Output for each character to be printed it obeys the same rules – typing \$ will pause output, then ^C will abort and any other key will resume output. If the ^P toggle has been previously set the string will also be sent to the LST device.

Read Console Buffer requires function number 10 in register C and the memory address of an input buffer in register pair DE. The layout of this buffer is shown in Figure 1. This function lets us input a string of characters from the keyboard, complete with the standard CP/M editing features like those available with CCP command lines.

Pressing RETURN will terminate input and returns the string to the calling program. ^P toggles the printer echo switch and ^C aborts and warm boots the system if typed at the start of the line. ^R retypes the line. Backspace may be destructive backspace, or this effect may be caused by the delete key depending on how the system has been configured. (Use the BASIC CONFIGIO program with Microsoft's CP/M2). On the newer Apples (Ile, Iic and Iigs) the up arrow will return ^K and the down arrow will return ^J.

To use function 10 we must have previously initialised the first byte of the buffer with a value for its maximum size; this is the maximum number of characters which we are going to allow the person running the program to type at the keyboard before cutting him off. This can be any number between 1 and 255.

The function will return either when the buffer has filled to the size specified or before that if Return is pressed to show end of input. When the function returns, CP/M has worked out the length of the string which was typed in and has put this number into the second byte of the buffer.

Set Console Status requires function number 11 in register C and returns a value in register A. If the value is 0 no character has been typed since the last character was read. If the value is Fh a new

character has been typed and is waiting to be read.

This function is also a pretty useless one. If you remember, Direct Console I/O will scan keyboard and return not only the status but also the character, if one is waiting. This is quicker and easier than calling function 11 to check the status and then having to check the result and call another function to actually read a character if one is waiting.

Return Version Number requires function number 12 in register C and returns values in register H and L which specify the version of CP/M present in the machine. This allows programs to work out exactly what facilities and functions are available to them on different machines which may be running different versions of CP/M. Older versions such as 1.4 and 2.0 do not have as many BDOS functions as do versions 2.2 and 3.0 and some common functions work slightly differently.

If register H returns with a value of 01 then we are in an MP/M system, otherwise register H will contain 00 to signify CP/M. In this latter case register L will contain 00 for versions before 2.0 and values of 20h or more for newer versions. Thus CP/M v2.20 will return 00 in register H and 22h in register L.

● Next month we'll look at the CP/M disc functions. □

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Mouse support for UCSD Pascal

SOME people love them, some people hate them – mice that is. I rather like them, especially on the Apple IIgs. I also like the UCSD Pascal system, so when the opportunity came along to review the Octopus Software Pascal Mouse System I jumped at it.

You probably read in March's *Apple User* that Apple no longer supports the UCSD Pascal system: If so, you also read that it "won't die any more quickly than the II itself". The contention by Stuart Bell is clearly supported by others – one of whom is the programmer who wrote MouseStuff and another of whom is Holdens Computer Services of Preston which supplies MouseStuff because between them they have produced a fine set of utilities for the Pascal programmer.

The first question (after inquiring the price, which is £39) is what do you get? Well, you do *not* get a graphics-orientated mouse such as in MouseDesk and all those applications on the Mac. But you *do* get a disc and manual containing a text-only system, written in assembly language, which is fast and very easy to program.

You, the software writer, do not have to know anything of assembly language – only Pascal.

Combined with the file-handling routines presented by Stuart Bell in his Building Block series you have a perfect opportunity to create a Pascal Mousedesk-type environment for your programs.

Three libraries

MouseStuff comes as a piece of code ready to add to your current Pascal library (version 1.1, 1.2 and 1.3 are supported) and for those who have never played with the Librarian and who never wish to, there are also three libraries (one for each version on the disc, which can be used to replace your current system.library).

Pascal 1.2 and 1.3 also have a system attach and associated drivers and data to implement into your system by copying to your root disc. These enable mouse interrupts under these two versions of Pascal; Pascal 1.1 does not support interrupts but you can still use this MouseStuff under keyboard control. It only takes a few moments with the system.filer to set a mouse into your system. The other things

Max Parrott reviews MouseStuff, Octopus Software's Pascal mouse system

you need (besides the Pascal system) are a IIc, IIc or IIgs to compile programs on, and the IIc needs a 6502 microprocessor and the new enhanced and character set roms, together with an Apple type auxiliary slot) 80 column display card.

The IIc and IIgs already have these (or the equivalents built in so you can start up without problems).

On the IIc it is useful to have an extended 80 column card so that you can run Pascal as a 128 system and it is nice to have a mouse card. But paradoxically, it is not necessary – the utilities provided can also be driven from the keyboard.

The MouseStuff cannot be used on a IIc with a 6502 microprocessor and the old character generator rom, nor can it be used on a II plus fitted with a 65C02 microprocessor and an old type 80 column card

such as a Videx Vidoterm or a Vision-80.

The disc comes with a demonstration source program for compilation to show some ways of programming the mouse and to show what can be achieved so easily.

Once you have installed MouseStuff into your library the line:

Uses MouseStuff;

(which incidentally appears in segments 18 and 19) gives you two VARIABLES and one TYPE.

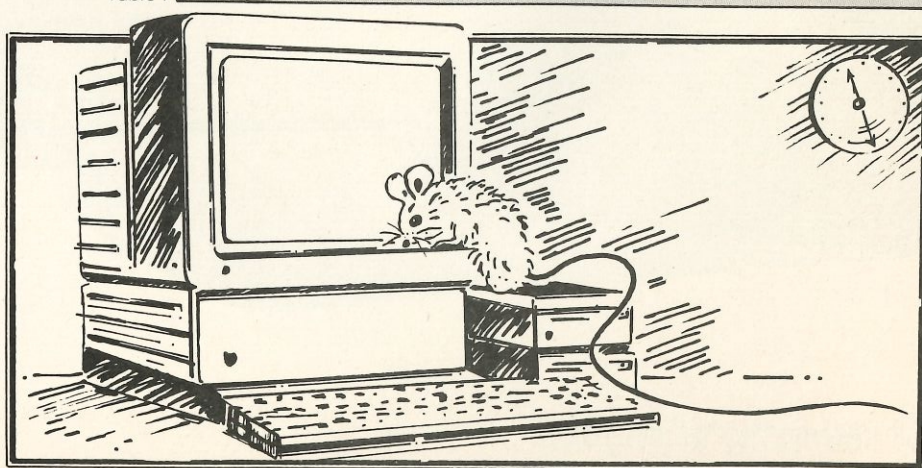
The variables are GOT_MOUSE of type BOOLEAN, which is set true or false as appropriate by the code in the unit and MOUSE which is defined as in Table I.

The use of GOT_MOUSE is probably obvious to all and the variable MOUSE, once you know that it is continuously updated by the mouse interrupt if GOT_MOUSE is true, is almost intuitively obvious. The current screen position of the mouse pointer is given by MOUSE.X & MOUSE.Y and the press of the button is shown by MOUSE.BUTTON becoming greater than 127. The positioning of the mouse pointer

**RECORD
X,Y,BUTTON:INTEGER;
END;**

**the TYPE is CHOICE_TYPE = PACKED RECORD
DESCRIPTION: STRING(29)
SYMBOL,COMMAND:CHAR;
TICKED, ALLOWED, UNDERLINED: BOOLEAN;
END;**

Table I



"It only takes a few moments to get a mouse into your system"

(cursor) is automatically handled by the unit.

Besides these variables and the type there are the following procedures:

```
PROCEDURE BOX(x1,y1,x2,y2:integer);
PROCEDURE CLEAR(x1,y1,x2,y2:integer);
PROCEDURE SAVE_SCREEN(x1,y1,x2,y2:integer);
PROCEDURE RESTORE_SCREEN;
PROCEDURE PRINTAT(mode:integer;message:string;x,y:integer);
PROCEDURE BEEP;
PROCEDURE MOUSE_ON;
PROCEDURE MOUSE_OFF;
and the function:
FUNCTION PULLDOWN(x1,x2,y2,choicenum:integer;var choices):integer;
```

BOX(x1,y1,x2,y2) draws a rectangular box dictated by the upper left and bottom right corner coordinates and CLEAR(x1,y1,x2,y2) will clear the window dictated by the same coordinates. Generally though, one would clear within the box rather than all of it.

If the screen contents under the box need to be saved for later restoration then SAVE_SCREEN(x1,y1,x2,y2) is the first used, followed by BOX(x1,y1,x2,y2) and CLEAR(x1+1,y1+1,x2-1,y2-1) and later by RESTORE_SCREEN.

Rather than use the slow combination of GOTOXY(x,y) and WRITE(string) to write in the box or on the screen, MouseStuff provides the procedure PRINTAT(mode:integer; message:string; x,y:integer). This is about five times faster and also can write normally, or in inverse or in mouse/graphics characters. This is so useful that it is worth buying MouseStuff for this procedure alone. Programs are much faster – filling a screen with text appears to be almost instantaneous.

Clearly you cannot have something for nothing: PRINTAT does not scroll the screen, nor will it wrap correctly to the next line if the string to be printed (which incidentally may be a function which returns a string as well as a string itself) is too long for the line. On the IIgs a string which is too long will wrap to a point eight lines down, so clearly it is the programmer's responsibility to check string lengths.

Creating menus

Pull-down menus are not created with the SAVE, BOX, CLEAR and RESTORE procedures but by declaring an array (1..number_of_entries_in_menu) of CHOICE_type as declared above, one array for each menu.

The program can then pass the strings required for each entry. It can also pass a command character and preceding mousestuff character such as an Open or Closed Apple. In addition each entry may be flagged as "allowed", in which case it is ticked, or "disallowed" in which case markers are presented at each end of the entry. (Examples of this are shown in Figure 1 which is based on the demonstration program given with the disc. Furthermore, parts of the menu may be delineated from others by setting the boolean MENU[num-

ber).UNDERLINED true. The effect of this is also shown in Figure 1.

The function PULLDOWN(x1,x2,y2,choicenum:integer;var choices) returns the

entry number for the choice made. If the mouse is present you put the mouse cursor over the appropriate top menu bar, hold down the mouse button and the menu appears. By keeping the button down and moving the mouse, the entries – if allowed – are highlighted. If not allowed, an entry is skipped over so that the next allowed entry is highlighted.

If the mouse cursor is moved away outside the edge of the window, or if the mouse button is released when at the top of the window, the menu is closed and the function returns zero. If the mouse button is released when a menu is open and an entry is highlighted the function returns the entry number to the calling program.

Demo routines

If the mouse is not present, pressing Escape enters the top menu bar regime. The sideways cursor arrows move sensibly from menu to menu (with wrap-round at the ends of the bar) in the demonstration program and the up and down keys move within a selected menu. Selection is made by pressing Return when an entry is highlighted.

The demonstration program contains routines to show how to make menu selections and how to interpret mouse button presses into characters depending on the mouse position. Decisions can then be made on the character value returned.

The mouse cursor is mouse character 3, the solid arrow. This moves as you move the mouse, replacing the character underneath. As the mouse moves on the original character is restored. At the start of a program the mouse is sited at the top left hand corner of the screen as a default. The mouse always has full freedom of the screen and will not disappear at the bottom and right edge of it; it is not possible to confine the mouse to an area of the screen.

Handling graphics

As I mentioned earlier, there is no graphics support with MouseStuff, but by careful management of variables it should be easy to use the mouse to return graphics coordinates to text-sized accuracy.

MouseStuff only supports the saving of one window or box for subsequent restoration. This is a shame because sometimes it is convenient to have overlapping or adjacent boxes restored sequentially rather than all at the same time.

However, I can see why only one screen is saveable. I tried to use Pascal's dynamic variables to save the screen on the heap for subsequent restoration by my own routines. While possible it is slow, about four seconds to save a screen, and it is memory hungry. On balance I think that MouseStuff takes the more sensible approach when it offers one very fast screen save.

When working within this restriction, quite simply a programmer can use MouseStuff to create a very professional, mouse-based, user environment with the attraction that the program will run equally well with and without a mouse. In fact even with a mouse the user can opt to use the Escape and cursor keys.

Product: MouseStuff
Price: £39
Requirements: IIgs or IIc or IIe if fitted with 65C02 update, modern roms and character set.
Supplier: Octopus Software, Holdens Computer Service, 191-195 Marsh Lane, Preston, Lancashire PR1 8NL.
Tel: 0772 561 1321

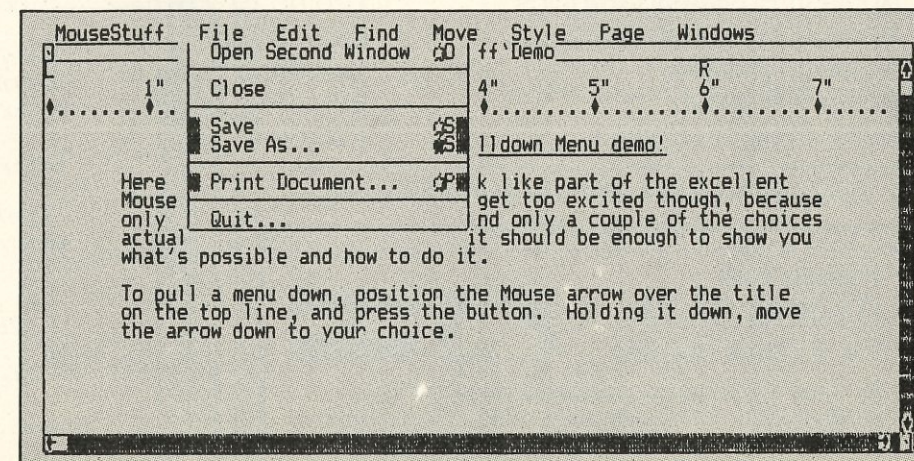


Figure 1: Printer dump showing a Pulldown menu but no inverse on the top line

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Take it a font farther

PROPOSERS of the IBM Personal Computer can always be counted upon to make the statement that there is still much more software available for their machine than there is for the Mac. One of the main reasons that they can still make that claim is that IBM users have to purchase all sorts of expensive software packages to allow their machines to do what the Mac does automatically.

A good example of this is the ability to use fonts. I recently read an advertisement for an IBM word processing package which claimed that its ability to not only use Greek and Hebrew fonts, but to mix them within a single line of text makes it the most advanced commercial word processor available anywhere. The cost? Over £200. I got MacWrite free with my computer.

What makes the Mac so much more flexible as far as typefaces are concerned is summed up in the hi-tech phrase bit-mapped. A typical IBM-compatible computer only remembers the codes for the letters you type. When you type an a, the computer thinks "that's key number 65". When it displays the letter on the screen, or sends it to a printer, essentially it is saying, "Next, print a number 65!" It leaves the printer to figure out what a number 65 should look like, and each printer has its own idea on this matter.

This may have been a very sensible way of doing things when only daisywheel printers produced legible results. In effect, the computer would say to the printer, "print this part of the daisywheel".

Now, even though the Macintosh still stores the number 65 for the a that you type, it is also able to remember different ways of drawing that character. Macintosh says to the Image Writer, "Next, draw something that looks like this", and then describes what a looks like in the font and size selected.

Fancy trying out a few fancy typefaces on your Mac? Conrad Gempf shows how to go about it

Users can take advantage of this ability in almost all the commercial software available on the Mac. Nearly every program will have the Font, Style, and Size menus which allow you to select the exact "look" you want. Once you have made your selections from the menus, typing automatically produces text on screen with the chosen attributes. Alternatively, most products will allow you to use the mouse to select type already entered, and change the look of it with menu selection.

A very nice feature of the Macintosh is its ability to guess at fonts. When you pull down the menu that contains font sizes, you'll notice that some numbers are outlined and some not. The outlined sizes are the ones that are loaded into the System. When you use these sizes, the computer knows exactly what the font should look like.

Mac's guess

When you use another non-outlined size, the Mac makes a guess at what the font would look like if you did have that size. Usually this produces fonts that aren't as clear as real sizes, but if a font has few curves and diagonal lines in it, the results can be very convincing.

Fonts usually come in files of their own or in Systems and to use a font, you must install it in the System on the StartUp disc

you are currently using. To do this you need the Font/DA Mover and just like the real lorry its icon resembles, it is not the easiest piece of equipment to operate.

When you double-click on its icon, you see a screen that has two small windows in it, with a button below each, and more buttons in between them. One window on the screen is for the source file and the other is for the destination. The OPEN/ CLOSE buttons below each of the windows will get you to the usual dialogue box for opening files, and once a file is opened, all the fonts will be displayed in the Font/DA Mover's window. Clicking on any particular font and size will activate the REMOVE button, and the COPY button, if you've OPENed two files.

COPYing is the main function of the Mover; be extremely careful about the REMOVE button. It will completely obliterate whatever is highlighted without first asking you "Are you sure?" Don't REMOVE anything unless you have checked there is a copy elsewhere.

If you need to make room in a System file, COPY some fonts to another disk, then REMOVE them from the System. The dialogue box will give you the option of creating a NEW file in which to store the fonts.

Unless you have a Laser Writer at your disposal, the three most important words in this whole article are Double Sized Fonts. The reason they are so important has to do with the way the ImageWriter printer works.

Remember what I wrote about the IBM-type computer style of communicating with the printer? The ImageWriter is capable of playing that game too, and that is what happens when you print a document at Draft quality. The page looks nothing like the screen because the Mac is letting the ImageWriter print your sentences using the typefaces built into the printer. It's very fast, but not very pretty.

Standard quality (called Faster on the new ImageWriter drivers) prints almost exactly what you see on the screen. For all intents and purposes, each pixel on the screen translates to one dot of ink on the paper.

But the ImageWriter is capable of more ▷

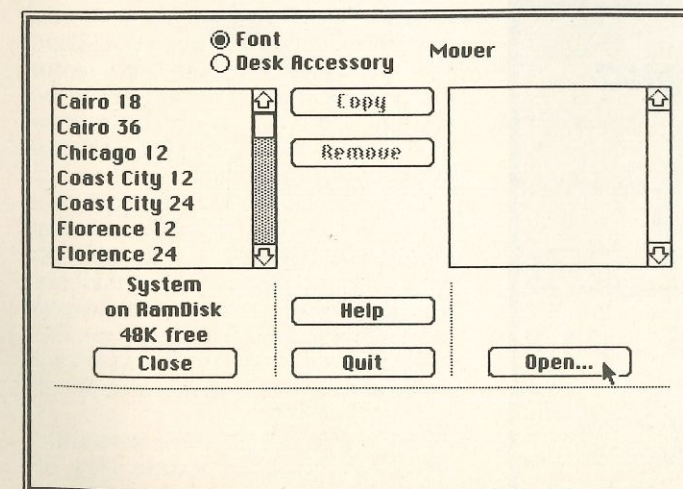


Figure I: All fonts are displayed in the Font/DA Mover's window

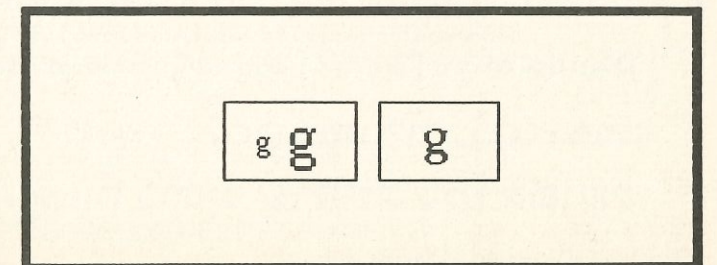


Figure II: The Imagewriter can improve on screen appearance

This is the "Saigon" font.

THIS IS CALLED BOISE....

ROME Is A Classic.....

Camelot is something special ✠

Text in Stuttgart looks very professional. 

Fonts from Mac the Knife Vol. 2

than this. When you choose the Best or High quality print option the Mac and ImageWriter do a very sneaky thing. Take a look at the letter g in 12 point New York. Compare it with 24 pt. New York. In order to get the detail and texture, the Mac screen needs the letter to be big. But the ImageWriter doesn't. When you print 12 pt. New York in Best quality, behind your back the ImageWriter is printing the letters the Mac knows as 24 pt., but doing it at half the size.

Double size

The result is a very classy-looking 12 pt. document. And it isn't just New York, or 12 point, of course – for 9 point Geneva, the ImageWriter uses 18. But what if you don't have the Double Sized Font loaded in the System? Without New York 24 in the System, Best quality New York 12 looks like regular New York 12 written with a paint brush.

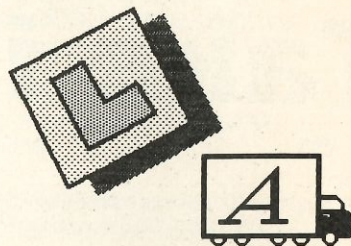
This knowledge can be of great help in preparing to print a document. For the best look possible, install fonts that are twice the size of the ones you used to compose your masterpiece. If you have used fonts for

which there are no double-size counterparts, then consider changing fonts.

For example, if you had planned to use New York 14 for chapter titles, unless you have a New York 28, you will probably be happier with 12 point bold. If you find you must use a font that has no double size equivalent, then you may as well print in Faster quality. With a reasonably fresh ribbon, a ransom note printed in Faster quality 18 pt. San Francisco will look better than Best quality.

The PageSetUp dialogue box gives a related possibility for printing. Most word processors will allow you to print your document at 50 per cent reduction. You now know enough to be able to realise that printing 24 point characters this way will produce a type that looks identical to 12 point printed at Best quality. The differences between these two options will concern the margins and the spacing between lines.

But 50 per cent also allows you the possibility of shrinking fonts that have only one size. San Francisco 18 printed this way will give the same effect as if you had 9 point at high quality. This particular choice looks a bit small, but try, for example, 14 point Toronto – Perfect for airmail letters.



There is another trick that you can use with fancy fonts for which you only have a large size. From a User Group, I recently received an interesting Art Deco font called Premiere. Unfortunately, it only came in 24 point size, too large for word processing. But in MacWrite, I can select Premiere 12, even though it doesn't exist. It was hard to read on the screen (in fact, I typed in Geneva 12, and only changed back to Premiere 12 later), but printing in Best quality resulted in beautiful type with normal size margins and spacing.

Your Macintosh comes with a suitcase full of fonts, more than enough to dazzle any of your friends with other computers. But there are literally hundreds of typefaces available for the Macintosh – I know, because I have over 200 of them. And you can get them all, just as I did.

Fee to group

The first and most important source for fonts (and lots of other things) is a User Group. Joining one of these allows you to order discs of free and share-ware from the group's libraries. And most groups have at least a few discs filled with nothing but fonts. You'll pay a fee to the group to cover the cost of the disc itself and the work that went into obtaining, cataloguing and processing your order, but in the end you'll have perhaps 12 new typefaces in assorted sizes for £7.

Here are the addresses of two UK User Groups with Public Domain disc libraries: Macintosh User Group UK, 55 Linkside Avenue, Oxford OX2 8JE; Apple2000 (for Apple & Macs) PO Box 177, St Albans, Herts, AL2 2EG.

There are discs of fonts that are available commercially, as well. Products such as Casady's FluentFonts, Mac the Knife vol.2 from Miles Computing, and Dubl-Click's new World Class Fontshare highly recommended. Ask your dealer for a look before you buy, and avoid LaserFonts, which are usually much more expensive, and often don't print well with the ImageWriter.

It can also be fun to design your own. ResEdit, a program also available through User Groups, will allow you to alter fonts, but by far the best way to design new typefaces is with a commercial program called FONTastic. You can sculpt your own characters using screens like MacPaint's fatbits, and produce fonts that anyone with a FONT/DA Mover can use.

With FONTastic and a little imagination, just about anything is possible. Why not type your next letter in your own handwriting? □

This is a font called Ravenna.

This is the Premiere font
that I mentioned.

ᠠᠨᠠᠨᠠᠨ ᠠᠨᠠᠨᠠᠨ ᠠᠨᠠᠨᠠᠨ (Lothlorien)

ܐܠܗܝܬܐ ܕܡܪܝܬܐ ܕܡܪܝܬܐ (Syriac)

זבוס ב ע; קסל סמן לסוקל (Eilat, a hebrew font)

A selection of freeware fonts

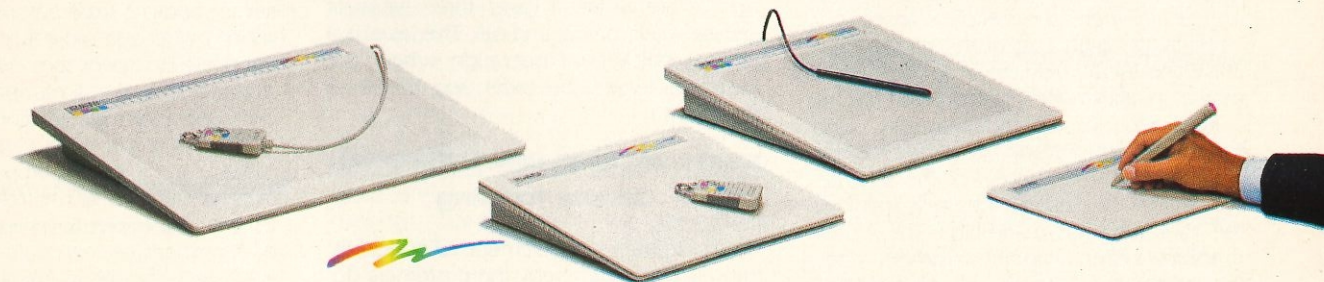


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DEALER ENQUIRIES WELCOME.

Quick print — with a £150,000 difference

IN America they do things differently. Or do they? On that question, hinges the future of a revolutionary new desktop publishing business that seems set to make its debut in Britain.

Alphagraphics is the name of the company which has set the pace in the States with the franchise development of quick print shops that utilise Macintosh desktop publishing systems and software to the full.

But Alphagraphics are more than just instant print operators with a computerised front-end system. They also offer an innovative do-it-yourself service where customers can rent desk space and do their own design and laserprinting on the Mac.

Rodger Ford, the dynamic boss of Alphagraphics, believes there is a future for his set-up in Britain and is prepared to put his mouth where other people's money is by offering the whole franchise system to a master franchiser in Britain.

The cost to the lucky company is about £500,000, and individual spin-off franchisees will pay £150,000 to run their own quick print shops with a difference.

Comprehensive deal

It's a lot of money. But already at least one major company is interested and negotiations are said to be "delicate". It is not clear where the delicacy arises, but certainly the high cost of the master franchise and the already crowded High Street market in quick print shops could be factors.

Ford, a tough, self-made man of 42 who operates from Tucson, Arizona, has no doubts about the success of the scheme. He says in the assured business-speak of the Yank who has made big: "The Alphagraphics system dignifies camera-ready artwork to paper". There is a lot more of the same talk such as "we make our customers look great on paper today, not tomorrow or next week".

Ford has every reason to be proud. He opened his first quick print shop in 1969 after starting his working life as a purchaser of dying or disabled cattle and tons of grease from restaurants and selling the combination to rendering plants.

It was after he opened his fourth quick

Nathan Goldberg is managing director of the London Desktop Publishing Centre

An American dream seems set to arrive in Britain: Nathan Goldberg investigates

print shop in 1979, and discovered the potential of Macintosh, that he hit on the idea of franchising Alphagraphics, complete with the legend, "Printshops of the Future." Since then he not looked back.

He now has 240 franchises in the States, growing at the rate six to eight a month. He has also sold the franchise in Canada and Hong Kong. Franchising is a multi-billion dollar business in the States and Ford has a 50 million dollar slice of that action.

He sells his idea heavily on the speed and efficiency of desktop publishing. It means that customers can get exactly what they want, words and design, thanks to Macintosh software and laser output.

The shops boast an extensive library of graphics and preset conventions for forms, giving you up to a thousand to choose from. Also available are disc conversions, scanners, commercial printers for the big runs and typesetters for quality output.

The average shop has four Macintoshes and a laserwriter. It gives three types of service — self, partial and full. The latter is a normal quick print operation where the customer leaves the order and the shop processes it.

On-site training

The most interesting element, of course, is the self service whereby the customers do their own work. If they are not familiar with the Macintosh they get a couple of hours introductory training by an on-site consultant. Then they are on their own to create their masterpiece with the consultant in the background to give help when needed.

The charge per hour works out at about £10 with an add-on fee of about 75p per laser printed page. The partial service is a mixture of the self and full service where the customer does some of the work, say the words, and a consultant articulates the design. That costs about £15 an hour.

However, it is the full, more traditional

service that brings in the big bucks with the adventurous and innovative self service accounting for at most 10 per cent of the business. This represents a sad fact of life for Mac users who believe their machine is Job's, if not God's, gift to mankind, particularly in such an Apple conscious country as America and one that boasts a much more adventurous spirit of enterprise and self help than Britain.

But Ford is nothing if not a hard headed, aggressive businessman. He sees the potential of desktop publishing, but would not make a fetish out of it. "At the end of the day the customer is not interested in the technology, it is the results that count". A lesson in pragmatism, perhaps, for some small Macintosh-driven bureaux in this country which seem more concerned with the means than the ends of their operations.

Heavy competition

But would the Alphagraphics concept succeed in this country? It is a moot question and Chris Escritt, the business manager of Letraset's Page and Print operation in London, is sceptical.

His outfit gives a design and print service to customers using Macs, but it is not self service and is a small part of the company's much bigger and more lucrative retail operation. He has spent some time in the States and has looked at a number of self service print operations including Alphagraphics.

"I think if the idea came to Britain it would face a lot of competition from the likes of Linotype and quick printers", says Escritt. "Any franchise who takes up what is a very expensive deal could find themselves in a cash negative situation for many months while the thing comes off the beaches".

Escritt adds: "Although Alphagraphics is doing very well in the States, there are signs that some of the franchises are beginning to struggle — and that is in a country where the consumer is much more turned on to the Macintosh and bureaux services".

The man from Page and Print believes the situation of centring a service-orientated business around the Mac is still in a state of flux. He advises would-be Mac owners, enamoured by their machine's boundless potential, to take a more fluid,



flexible approach.

"For the small person working from home, they would be best advised to take it small and slow, optimising their earnings over capital", he says.

Those words of caution are obviously not echoed by the indefatigable Ford. As far as he is concerned, the main ingredient in the success for a franchisee is the Alphagraphics magic, the service, support and experience they offer to the person who is prepared to risk £150,000.

Crowded market

To be fair, the package that Alphagraphics offers is considerable, backed up by hard-earned experimentation and experience. It includes initial financing help, four weeks training, careful selection of location, marketing support including extensive support for the launch day and three months thereafter and ongoing regional based support.

"We are not in the business of being suitors, rather it is we who are being wooed. We have a success story to offer people", says Ford of his recent visit to Britain, during which he spoke to a number of companies interested in developing his brainchild here. He hopes to clinch a deal

within between three to six months.

Ford makes great play on the fact that not just anyone can get an Alphagraphics, they must have the right stuff to succeed. Unlike some quick print operations in this country, the company is extremely fussy about the presentation that each Alphagraphics outlet gives to the world. Image is vital: modern, gleaming shops, decked out in strong colour combination of red, white and blue with staff uniforms to match.

If pushed, Ford admits there are problems in Britain. A workaholic himself, he says the work ethic is not as well developed here as in the States, but adds quickly and, perhaps, diplomatically: "The more I visit Britain, the more I see that changing".

He sees other problems, one of them from a location point of view in that there is generally only one shopping centre in a medium sized British town where in America you can have up to five. Other snags include chronic lack of parking space and difficulty in obtaining leaseholds.

But he has little doubt the venture can succeed as long as the master franchiser follows the Alphagraphics recipe for success in the States almost down to the last detail, "except for the few cultural differences", he adds enigmatically.

This is what Ford describes as the Macdonalds syndrome, which combines all the

best virtues of strong market identity, prime location and speed and ease of service. The mammoth hamburger franchisee has set the pace throughout the world and it's more that sort of Mac that the entrepreneur American has looked to than the other Mac when it comes to raking in the money.

The hard sell

It is not certain at all if the franchise scheme, whatever its future in Britain, will be attractive to Mac devotees as a business proposition. They tend to pride themselves on their individualism, and the Alphagraphics imported brand of hard sell and muscular corporate regimentation may not be to their taste.

Ford will not lose any sleep over that. As far as he is concerned you don't need to love the Mac or have any knowledge whatsoever about it to succeed. All you need to have is plenty of drive and will to succeed to cut the Alphagraphics mustard.

Clearly one likely winner of a successful invasion of those shores by Alphagraphics is bound to be Apple with the spin off on sales and product identification of the Mac. And that, as they say in the land that gave us Roger Ford, is the bottom line. □

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TO ORDER PLEASE USE THE FORM ON PAGE 61

Breaking the rules at high speed

SWYFTWARE is a program that breaks most of the rules about the way computers work. It does not use files names and there is no need to format discs. It has only 10 commands and it uses the same one for load and save.

It doesn't use the cursor keys but the cursor can be moved easily through the text. There are no menus and no Help screens. It is a word processor with communications, information retrieval, calculation and programming facilities.

This fast, very fast, product is the brainchild of Jeff Raskin who, when he worked for Apple in 1979, put forward a specification for a new computer that eventually emerged as the Macintosh.

He left Apple in 1982 and now heads a company called Information Appliance Inc which markets Swyftware. It aims to sell an appliance with the program in firmware; just plug it in and start work.

When Swyftware was first announced in late 1985, it received rave reviews in some journals. But is it as good as they say?

One version, in a chip on a card that fits into slot 3 of an Apple IIe, is not suitable for the English Apple IIe, where the auxiliary slot is in front of slot 3.

Tokenised Forth

The other version is on disc and needs an Apple IIc or a IIe with an extended 80 column card. The whole program is only 16k of code written partly in tokenised Forth and partly in assembler. It takes about 10 seconds to start up.

It comes with a 150 page manual, but you can learn the essentials from the tutorial disc in less than one hour. On the back of the tutorial disc is a utility program for converting Prodos files to Swyftware and vice versa.

The utility disc can be copied with the Prodos filer but the Swyftware disc and the tutorial disc cannot. However, the Swyftware program is automatically copied on to every disc on which you save documents.

When you start up the Swyftware disc it displays a row of = signs across the top of the screen with a zero in the centre. Immediately below is another row of = signs with a figure 1 in the centre. These bars denote the beginning and end of page

**Geoff Wood tries out
Swyftware and finds
it good, but perhaps
too late on the scene**

1 of your text. As you type, the second bar moves down the screen below the text. When the page is full (normally 54 lines) another bar of = signs appears with a figure 2 in the centre, and so on.

Like most word processors, Swyftware features word-wrap so it never splits a word at the end of a line. At the end of a paragraph, you should press Return twice to give a blank line. To force a page break, press Escape.

Normally the cursor is in two parts, a flashing checkerboard and, just to its left, a non-flashing inverse rectangle which highlights the character that will be erased if you press the Delete key.

To move the cursor forwards or backwards one character at a time, you must press either the Closed or Open Apple key. The positions of these keys on the right and left of the spacebar indicates which way the cursor moves. Thus the Apple keys act as right and left cursor keys, except that they do not repeat when held down.

The process of moving the cursor one character at a time is called creeping. As the cursor creeps forward or backwards it changes to a flashing character occupying only one character space and alternating between a checkerboard and an inverse rectangle. When you start typing again, the double cursor appears.

Leaping around

The significant difference between Swyftware and most WP programs is the process called leaping. The cursor can leap through the text, forwards or backwards, almost instantly, to find any character or string of characters.

To leap forward, just hold down the Closed Apple key and press a key for the character you want to leap to. The cursor jumps immediately to the first occurrence of

that character. To find the next occurrence of the same character, keep on holding down the CLOSED Apple key and press the Tab key. Press it again to find the next occurrence, and so on.

At the end of the document the cursor moves to the start and the search continues. Leaping backwards is a similar process except that you use the Open Apple key.

To scroll through text a sentence at a time, hold down one of the Apple keys, press the . then Tab. To scroll through text a paragraph at a time, hold down one of the Apple keys, press Return twice followed by Tab once. To move through text a word at a time, hold down one of the Apple keys, press the spacebar then Tab.

Incremental search

To find a particular word, hold down one of the Apple keys and press the keys for the first few characters of the word. Immediately, the cursor leaps forwards or backwards to find the first occurrence of the first character then the first occurrence of the first two characters and so on - an incremental searching which is more common on mainframes and minicomputers than on micros.

To find successive examples of the same word, keep on holding down the Apple key and press Tab. If you find that it is searching in the wrong direction, release the Apple key, hold down the other Apple key and press Tab; the program remembers the string of characters.

Leaping can be partly case-sensitive. If you enter lower case, it finds examples in either upper or lower case. But if you enter upper case letters, it finds upper case only.

If the string of characters cannot be found, the cursor returns to the place it started from. So if you make a mistake while holding down an Apple key and typing a string of characters, just type zzzz; the cursor will revert to its starting place. Alternatively, you can correct the mistake by using the Delete key while the Apple key is still held down.

The leaping feature means that Swyftware can be used as a data retrieval system. For example, you could have a list of names, addresses and telephone numbers. To find any telephone number, just ▶

hold down an Apple key and type part of the name or address. To find an address, hold down an Apple key and type part of the name or telephone number.

You can delete one character or more by using the Delete key. If the double cursor is showing, the Delete key deletes characters under the highlight to the left of the flashing checkerboard. If the single cursor is displayed, the Delete key deletes characters to the right of the cursor. As characters are deleted, the remaining text on the line moves back towards the cursor and, if necessary, words from the next line come up to fill the line.

If you want to delete several words or a whole chunk of text, it is better to highlight the text first. To select a chunk of text, move the cursor to one end of it (by creeping or leaping), then move the cursor to the other end and press both Apple keys simultaneously. The selected text is highlighted in inverse and if you press Delete the text disappears and the remaining text is reformatted.

Moving text

Text deleted after highlighting is held in memory. Control+A brings it back on-screen - handy if you make a mistake. To move a chunk of text to another place, move the cursor before using Control+A.

To copy a chunk of text highlight it, delete it and immediately retrieve it with Control+A (leaving the text unchanged), then move the cursor to a new location and press Control+A again.

To search for and replace a word or phrase, type the replacement word or phrase and then delete it. Next leap to the first example of the word you wish to replace, delete it a character at a time with the Delete key and press Control+A to retrieve the replacement word. Leap to the next example, delete it and again press Control+A and so on. There is no command to search for and replace all examples of a word or phrase.

Basic rules

Swyftware can perform calculations anywhere in the text using Basic commands. For example, if you type ? 2378 + 4964 then press Control+G, the answer 7342 appears. Programmers will recognise ? as shorthand for the Basic command for print. Indeed, if you prefer, you can type print 2378 + 4964.

Pressing Control+G highlights the statement; the answer appears to the right of the highlight. If you no longer need the statement, press the Delete key; to retain it, press the spacebar.

Calculations follow the rules of Basic (multiplication before addition, and so on) and you can use SIN, COS, TAN, PI, SQR and other Basic commands. In fact, you can write a complete program in Basic (up to

900 bytes), list it and run it. For example, you could write:

```
10 FOR I = 1 TO 31
20 PRINT "Jan";I
30 NEXT I
RUN
```

You should then highlight the whole program including the word RUN, then press Control+G. A calendar will be displayed thus:

```
Jan 1
Jan 2
Jan 3
Jan 4
```

and so on. In this way you could create a

diary with one line or more per day, extending it month by month. You could find any entry in the diary by leaping to the date or a target word.

Swyftware can do other Basic operations. To create a glossary you could type, say, AS = "Apple User, Database Publications" and press Control+G to record the message. Thereafter, if you type ?AS and press Control+G, the string of text will appear on the screen.

You can create up to 26 phrases stored as letters of the alphabet, provided that the total does not exceed the space allocated for Basic. A phrase can be up to 80 charac-

ters in length.

You can even use PEEK and POKE commands but the manual warns you to take care because some commands can cause the system to hang. Control+Reset usually brings it back to normal with no loss of text.

A document can be up to 40,000 characters, about 20 pages of text. If you have a large document and want to know how much space is left, you can type ?RO% and press Control+G to display the exact number of bytes remaining.

As with many other programs, it pays to keep saving your work. To do so you put an unformatted disc in the drive and press

Control+L. The whole document and the Swyftware program is saved on the disc in about 10 seconds. You can re-save the document on the same disc as often as you wish.

Since the entire program and text is in memory, Swyftware needs only one disc drive. Once the program is loaded, you can remove the program disc and replace it with a blank disc ready for saving a document.

After a document has been saved, the cursor flashes rapidly (the happy cursor). You can move the happy cursor around in the text, but as soon as you make some

changes to the document the cursor flashes at normal speed. This means that you always know whether the current version of your document has been saved.

If the disc in the drive is not blank, or if it is not the disc on which you have previously saved the document, Swyftware will not use it. Instead it gives a bleep and the disc drive stops. You can save a document on two or more discs by swapping discs between the save commands, but you must not make any changes to the document between swapping discs.

The program saves only one document per disc, so it does not need file names or disc names. Floppy discs that normally hold up to 140k of text hold a maximum of 40k of text with Swyftware, so it needs more discs than other word processors. But it can find any part of a document quickly, so you can create large documents that, in effect, contain several or many files.

With most word processors, you create a series of files and save them with different names on one disc. With Swyftware, you can create several files in one document and save them as one document. When you need one of the files again, just load in a document and use the leap facility to find the one you want.

For example, a document could consist of letters to different people. To find the letter you want, hold down an Apple key and type in a date or a name or a word to take the cursor to the letter you want.

Unusual concept

The designers say that this is the way our minds work. when you want to find a letter, you don't remember a file name but you can recall the approximate date (month/year) or the name of the addressee or the subject matter. One word is often enough to find the part of the document you want.

Computer experts may find this concept strange, but it seems to work. With conventional programs, if you forget the name of a file you may have to load several before you find the one you want. With Swyftware, you only have to get the right disc. Even if you use the wrong disc, it takes only a few seconds to load another.

Since the program is saved on every disc, the fastest way to change to another document is to swap discs and restart the computer. The document is up on the screen within 15 seconds. You can leap to any word instantly.

You can combine documents or parts of documents form two or more discs provided that the total amount of text does not exceed 40,000 characters. Just load in one document, highlight the part you want to keep, change discs and press Control+L. The highlighted text is inserted at the location of the cursor in the incoming text. If the cursor happens to be in the wrong place, you can press Delete to wipe out the highlighted text, move the cursor by leaping or creeping, then press Control+A to

Feature Swyftware Apple Writer 2.0

Formatted discs needed	No	Yes
File names and disc names	No	Yes
Maximum file size	40,000 bytes	46,845 bytes
Use all disc space	No	Yes
Start program (boot)	10 seconds	15 seconds
Enter pathname of file	-	5 seconds
Load 20k file	5 seconds	25 seconds
Total time to start and load	15 seconds	45 seconds
Save 20k file	10 seconds	28 seconds
Save part of a document	No	Yes
Load part of a document	No	Yes
Merge text from two documents	Yes	Yes
Help screens	None	Yes
Move cursor to start or end	Instantly	1 second
Move cursor one character	Easy	Easy
Traverse several characters	Tap Apple key	Hold cursor key down
Move cursor one word	Easy	Easy
Move cursor several words	Fairly easy	Very easy
Move cursor one sentence	Easy	Use cursor keys or Find
Leap several sentences	Easy	Use cursor keys or Find
Move to end of paragraph	Easy	Use Find command
Move cursor one line	Not easy	Easy
Move cursor one screenful	Not easy	Easy
Search backwards or forwards	Yes	Yes
Find a word (first time)	Very easy	Use Find command
Find further occurrences	Easy	Easy
Wildcard and any length search	No	Yes
Replace a word or phrase	Not easy	Easy
Replace all occurrences	Tedious	Very easy
Change case (upper/lower)	Retype	Easy (Control+C)
Delete a character	Easy	Easy
Delete several characters	Easy	Easy
Delete a word	Easy	Easy (Control+W)
Delete a sentence	Easy	Delete a word at a time
Delete a paragraph	Easy	Easy (Control+X)
Delete whole document	Easy	Easy (Control+N then Y)
Recover deleted text	Easy (Note 1)	Easy (Note 2)
Transpose two characters	Retype	Easy
Transpose two words	Easy	Easy
Transpose two paragraphs	Easy	Easy
Copy words or paragraphs	Easy	Easy
Use Basic commands	Yes (900 bytes)	No
Word processing Language	No	Yes (2048 bytes)
Word count	No	Yes (WPL program)
Mail Merge	No	Yes (WPL program)
Glossary function	Limited	Good
Save glossary file	Yes	Yes
Use Tab key	Yes	Yes
Tab backwards	No	Yes
Adjust tab stops	No	Yes
Save tab positions	N/A	Yes
Centre headings	Insert spaces	Easy (Embed .g)
Fill justify	No command	Easy
Right justify	No command	Easy
Double line spacing	Yes	Yes
Triple line spacing	No	Yes
Adjust characters per line	Yes(W1%)	Yes (Control+A)

Table 1: Comparison of Swyftware and Apple Writer 2.0 features

Feature Swyftware Apple Writer 2.0

Vary margins in document	Difficult	Easy
Inset first word of para	Insert spaces	Easy (Embed .pm5)
Hanging paragraphs	Difficult	Easy (Embed .lm10 & -.pm5)
Headers and footers	No	Yes
Footnotes	No	Yes
Page numbers	Yes	Yes
Suppress page numbers	Yes	Yes
Omit number on page 1	Yes (default)	Yes (Embed command)
Print number on page 1	Yes (PF%=1)	Yes (default)
Change page no. of first page	Yes	Yes
Page numbers at top	No	Yes
Page numbers centred	Yes	Yes
Page numbers at left	No	Yes
Page numbers at right	No	Yes
Page numbers alternate R/L	No	Yes (Embed commands)
Link files for printing	No	Yes (Embed .cp)
Prevent paragraph split	No	Yes
Change lines per pages	Yes	Yes
Change top margin	Yes	Yes
Change bottom margin	Yes	Yes
Change characters per inch	Yes	Yes (Embed printer code)
Force a page break	Yes	Yes
Display page breaks	Always	Yes (Control+Underline)
Underline characters	Yes	Yes
Boldface (if printer permits)	Yes (Note 3)	Yes (Embed command)
Superscript (if printer permits)	Yes (Note 3)	Yes (Embed command)
Subscript (if printer permits)	Yes (Note 3)	Yes (Embed command)
Print part of document	Yes (highlight)	Yes (Embed .ep0 and .ep1)
Split display	No	Yes
Toggle word-wrap on/off	No	Yes
Insert Control characters	Yes (use BASIC)	Yes (Control+V first)
Insert Escape character	Yes (use BASIC)	Yes (Control+V first)
View another file	No	Yes
Connect keyboard to printer	Yes	Yes
Terminal mode	Yes	Yes
Auto dial	Yes	No
Display remaining memory	Yes (?RO%)	Yes (Optional)
Display bytes used	No	Yes (Optional)
Display cursor position	No	Yes (Optional) (note 4)
Replacement mode	No	Yes
Display print parameters	Difficult	Easy
Save/load print parameters	Yes	Yes
Display carriage returns	No	Yes (Optional)
Print to screen	No	Yes

Note 1: Characters deleted one at a time with the Delete key cannot be recovered. Highlighted text can be deleted and retrieved (up to 40k).

Note 2: Apple Writer text deleted with Delete key cannot be recovered, but text deleted with Control+W and Control+X can be recovered (up to 1k).

Note 3: Swyftware uses the underline character for underline, boldface, subscript and superscript. It is awkward to use all of them in one document.

Note 4: Apple Writer normally displays the number of characters between the cursor and the start of the file and between the cursor and the start of the current paragraph.

◀ re-insert the text.

To print out all or part of a document you must first highlight the text you want to print, then press Control+N.

The defaults for printing are 66 lines per page with top and bottom margins of 6 lines, leaving 54 printed lines with up to 80 characters per line. These parameters can be changed quite easily. For example, to change the number of characters per line to 65, just type `WI%=65` and press Control+G. Almost instantly the whole document is reformatted. Screen updating is very fast.

Similar commands are used to set the left margin (MA), the number of lines in the top and bottom margins (AB and BE, short for ABOve and BElow), the number of lines per page (PL), the line spacing (SP) and the first page number (PA). You can change several of these at a time. If you type `WI=65:MA=5:PA=11` and then press Control+G, all three instructions are carried out.

These commands affect the whole document; you cannot set one paragraph to be narrower than others. To inset a paragraph, you must print out part of the document, change the margin and line width, print the inset paragraph and then change the margin and line width back again. There is no command to centre the text on a line, so you have to insert spaces to centre a heading.

Swyftware normally does not print a number on the first page, but you can change this by typing `PF%=1` and pressing Control+G. The page number is normally printed dead centre, three lines up from the bottom of the page. You can change the vertical position, for example, type `LP%=4` and press Control+G.

Printer settings

Swyftware can be used with a variety of printers. The Apple version on disc is set up for the Imagewriter and Scribe printers but if the default settings do not suit your machine you can change them. The manual gives details of settings for 40 different printers. A novice might find the task rather formidable because it involves typing in strings of commands like `PRS=CHRS(0) + CHRS(0) + CHRS(5) + CHRS(27) + CHRS(77) + CHRS(27) + CHRS(108) + CHRS(8)`.

The manual points out that you could type `CHRS()` once, highlight it and delete it, copy it as many times as you wish and then enter the Ascii character numbers. But it would be easier if the standard settings were held as a file on the back of the Swyftware disc so that you could leap to the name of your printer, highlight the settings and press Control+G to install them.

Having set Swyftware to suit your printer, you could delete all the text and save the program on a blank disc. For new documents, you could start up from this disc rather than the original Swyftware disc.

With dot matrix printers, you can change

the character style by using the appropriate messages, for example Escape P for proportional spacing on an Imagewriter would be `CHRS(27)+CHRS(80)`.

To underline text you type an underline character at the start and end of the text. The underline characters are treated as spaces for printing.

You can change the codes so that the underline characters switch on and off other features such as boldface, subscript, superscript and so on. If you want to use several of these features in one document, you must print out part of the document, change the settings, print some more and so on.

Comms feature

The communications part of Swyftware assumes that you have either an Apple IIc, or an Apple Super Serial Card in slot 2 of an Apple IIe. You can communicate directly between two Swyftware-equipped Apples or you can use a modem to communicate with a remote computer. To send a message, all you have to do is to highlight the text and press Control+D.

Swyftware is set at 300 baud, but you can set the rate as low as 50 or as high as 153,600 baud, though in practice, rates higher than 300 baud can lead to loss of characters. You can also change the number of bits per word, the stop bits and the parity.

If your modem has autodial, Swyftware can dial for you. Just type `ATDT` (or a different code to suit your modem) followed by the telephone number, then press Control+G. If you often dial certain telephone numbers you could have a list of numbers (each preceded by the modem dialling code) in a document, leap to the number, highlight the number and the code and press Control+G to dial.

There is no doubt that Swyftware does all that is claimed for it in the manual. It is fast, reliable and almost foolproof. But how does it rate against other word processors? Its nearest rival in terms of features and performance is Apple Writer 2.0 (the ProDOS version). I tried out various operations using this article in both programs.

Good tutorial

Table I compares the main features of the two programs. Some operations in Swyftware are easier than in Apple Writer, but others are more difficult, especially print formatting. Out of the 100 items listed, the two programs were more or less evenly matched on 38. Swyftware has the advantage on 15 but Apple Writer was better on 47. Thus Apple Writer offers more features.

Of course, there are more commands in Apple Writer so there is more to learn. But the tutorial disc with Apple Writer is excellent and, if you forget a command,

there are help screens and a quick reference card. Earlier versions of Apple Writer had some shortcomings but the ProDOS version is very good.

To make life easier for learners, Swyftware comes with a set of adhesive labels to stick on the front of some keys, for example, LEAP (for the Open and Closed Apple Keys), LEAP AGAIN (Tab), PAGE (Escape), USE FRONT (Control), DISC (L), PRINT (N), CALC (G), SEND (D) and INSERT (A). The manual and the tutorial disc give some of the instructions in the form `USE FRONT - DISC` rather than `Control+L`. I found this confusing but a novice might find it helpful.

The Swyftware manual tells you how to change some of these commands if you prefer. For example, you could use Control+P for print, Control+D for disc, Control+S for send. But why did they not use alphanumemonic commands in the first place? (You could not use Control+I for insert because that is the equivalent of Tab, but you could use Control+R for retrieve.)

It may not be fair to judge Swyftware by the Apple disc version. Presumably, the appliance will have dedicated function keys for the main commands so it will be easy to use. Nevertheless, the simplicity of Swyftware is only partial. Some operations are quite tricky for people with no knowledge of Basic.

Shortcomings

Experienced computer users know that the easiest computer program to use is the one you have already learnt. Having already learnt Apple Writer, I can see no advantage now in changing to Swyftware.

But if I had learnt it before Apple Writer, would I now change? On balance, I think so. Although Swyftware has some advantages, it also has shortcomings. Its speed and ease of use — no file names, few commands — must be set against its limitations in print formatting. You can use Apple Writer with no knowledge of Basic, not so Swyftware.

If you have an Apple IIe or IIc and have not already learnt a word processor program, should you choose Swyftware, Apple Writer or another word processing program? For computer novices, I would suggest AppleWorks. Although it has more commands, it is easy to learn. It is menu driven but fast in operation. And once you have learnt the commands for the AppleWorks word processor, most of them apply in the Spreadsheet and Database.

Despite its merits, Swyftware is unlikely to dislodge the IBM PC from the business market or Apple from the educational and home markets in the USA. If it had appeared a few years ago in firmware in an Apple IIc with a cheap printer, it could have commanded the market that the Amstrad 8256 had gained.

Swyftware looks to me like a good idea that has arrived too late. □

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Flip Toolkit Assembler bang up to date

I HAVE been using the Apple Toolkit Assembler under Dos 3.3 for several years, and while it is still satisfactory for my software needs, its design does appear to have been overtaken by recent hardware developments. My particular case may illustrate the point.

I have an Apple Euro II+ with a Cirtech Flipper card in slot 5 and three floppy disc drives connected to slot 6 – the disc controller card I have in slot 6 is capable of controlling up to four drives.

I want to be able to run the Toolkit Assembler from drive 1 of the Flipper card, and to use slot 6 drive three for long term data storage. Not an unreasonable requirement, however, neither of these is possible without making some modifications to the Toolkit Assembler programs.

In this article I'll outline the modifications necessary to allow arrangements such as that described above, describe a workable configuration and present a couple of programs which, together with the Flipper card provides a quite flexible system.

First a few general points about the modifications required:

- The modifications are made by applying machine code patches to relevant programs.
- The patches should only be applied to a copy of the relevant program and never to the original.

Trevor Hobson shows how to run Apple's assembler from a Flipper drive

- The patches in this article relate to the files:

EDITOR
EDASM.OBJ

- The files EDITOR & EDASM.OBJ overlap in memory, so the patches should only be applied to one file at a time.
- To apply the patches:

BLOAD EDITOR
(OR BLOAD EDASM.OBJ)
CALL -151

type the patches as shown below.

(CTRL-B)(RETURN)
BSAVE EDITOR,A\$11FF,LS0E01
(OR BSAVE EDASM.OBJ,A\$0C00,LS066C)

The relevant patches are:

Patch 1: To cause the Toolkit Assembler to run from a slot other than slot 6, patch EDASM.OBJ as follows:

0C2A:A9 s0 EA

(where s = the slot number)

For example, to run the Toolkit Assembler from slot 5 apply the patch:

0C2A:A9 50 EA

Patch 2: To cause the Toolkit Assembler to run from a drive other than drive 1, patch EDASM.OBJ as follows

0FBF:Bd

(where d = the drive number)

1010:Bd
102E:Bd

For example to run the Toolkit Assembler from drive 2 apply the patches:

0FBF:B2

and so on.

Patch 3: When using the Editor DR command to change the drive to be used in Assembler and Editor data operations (load save, assemble and so on, the only valid drive numbers allowed are 1 and 2. To change this so as to allow drive numbers in the range 1 to n to be accepted, patch the EDITOR as follows:

150C:XX

(where XX = max. drive no. +1)

For example to allow drive numbers in the range 1 to 4 apply the patch:

150C:05

Listing 1

```
10 REM HELLO
20 D$ = CHR$(4)
30 ESC$ = CHR$(27)
40 :
50 :
60 :
70 :
80 : REM SET UP FLIPPER CARD
90 : PRINT D$;"IN#5"
100 :
110 :
120 :
130 :
140 :
150 :
160 :
300 HOME
310 VTAB 5
320 HTAB 13: PRINT "SELECT OPTION"
```

```
330 HTAB 13: PRINT "-----"
340 VTAB 10: HTAB 11: PRINT "1 RUN EDASM SLOT 6"
350 VTAB 12: HTAB 11: PRINT "2 RUN EDASM SLOT 5"
360 VTAB 14: HTAB 11: PRINT "3 SET UP PRINTER"
370 VTAB 16: HTAB 11: PRINT "4 EXIT"
380 VTAB 20: HTAB 15: PRINT "? ";
390 GET A$
400 IF A$ = "1" THEN PRINT :SD$ = ",S6,D1": GOTO 2000
410 IF A$ = "2" THEN PRINT :SD$ = ",S5,D1": GOTO 2000
420 IF A$ = "3" THEN PRINT : PRINT D$;"RUN SET-UP PRINTER"
430 IF A$ = "4" THEN HOME : END
440 PRINT CHR$(7)
450 GOTO 380
500 :
550 :
600 :
650 :
700 :
750 :
800 :
850 :
2000 REM RUN EDASM
2010 PRINT D$;"RUN EDASM";SD$
```

Listing 2

```
10 D$ = CHR$(4)
20 ESC$ = CHR$(27)
30 FSTLINE = 8
40 SPACING = 2
50 :
60 :
70 NUM = 6: REM 6 OPTIONS
80 SKIP = 6: REM SKIP 6 LINES
90 :
100 :
110 :
120 :
130 :
140 DIM SETTING$(NUM - 1,2)
150 SETTING$(0,0) = "INITIALISE PRINTER"
160 SETTING$(0,1) = "Y"
170 SETTING$(0,2) = ESC$ + "@"
180 SETTING$(1,0) = "EMPHASISED PRINTING"
190 SETTING$(1,1) = "N"
200 SETTING$(1,2) = ESC$ + "E"
210 SETTING$(2,0) = "SKIP OVER PERFORATIONS"
220 SETTING$(2,1) = "Y"
230 SETTING$(2,2) = ESC$ + "N" + CHR$(SKIP)
240 SETTING$(3,0) = "AMERICAN CHARACTERS"
250 SETTING$(3,1) = "Y"
260 SETTING$(3,2) = ESC$ + "R" + CHR$(0)
360 SETTING$(4,0) = "CONDENSED PRINTING"
370 SETTING$(4,1) = "N"
380 SETTING$(4,2) = CHR$(15)
390 SETTING$(5,0) = "ENLARGED PRINTING"
400 SETTING$(5,1) = "N"
410 SETTING$(5,2) = ESC$ + "W" + CHR$(1)
420 :
450 :
500 :
600 :
700 :
800 :
1000 : REM DISPLAY SCREEN
1010 HOME
1020 HTAB 13: PRINT "SET-UP PRINTER"
1030 HTAB 13: PRINT "-----"
1040 FOR I = 0 TO NUM - 1
1050 VTAB FSTLINE + SPACING * I
1060 HTAB 5: PRINT SETTING$(I,0);

1070 HTAB 35: PRINT SETTING$(I,1)
1080 NEXT I
1090 :
1100 :
1110 :
1120 :
2000 REM GET INPUT
2010 VTAB 24: HTAB 9: PRINT "ACCEPT SETTINGS(Y/N)? ";: GET A$
2020 IF A$ = ESC$ THEN GOTO 6000
2030 IF A$ = "Y" THEN GOTO 5000
2100 IF A$ < > "N" THEN PRINT CHR$(7);: GOTO 2000
2150 :
2200 :
2250 :
2300 :
3000 REM GET NEW SETTINGS
3010 I = 0
3020 GOSUB 10000
3030 IF I < 0 THEN GOTO 2000
3040 IF A$ = "Y" OR A$ = "N" THEN PRINT A$:SETTING$(I - 1,1) = A$
3050 IF I < NUM THEN GOTO 3020
3060 GOTO 2000
3070 :
3080 :
3090 :
3100 :
3200 :
5000 REM SET PRINTER
5010 HOME
5020 PRINT
5030 PRINT D$;"PR#1"
5040 FOR I = 0 TO NUM - 1
5050 IF SETTING$(I,1) = "Y" THEN PRINT SETTING$(I,2)
5060 NEXT I
5070 PRINT D$;"PR#0"
5900 :
6000 REM END OF PROGRAM
6010 HOME : PRINT : PRINT D$;"RUN HELLO"
6500 :
7000 :
7500 :
8000 :
10000 REM GET ANSWERS
10010 VTAB FSTLINE + SPACING * I: HTAB 35
10020 GET A$
10030 IF A$ = ESC$ THEN I = I - 1: RETURN
10040 IF A$ = CHR$(13) OR A$ = "N" OR A$ = "Y" THEN I = I + 1:
RETURN
10050 PRINT CHR$(7)
10060 GOTO 10000
```

I find the following configuration useful for running the Toolkit Assembler with the Flipper card. On a floppy disc in drive 1 of slot 6, and also on the Flipper drive 1 in slot 5, I have the following files:

HELLO
EDASM
EDASM.OBJ
ASSM
EDITOR
ASMIDSTAMP
RLOAD
RBOOT
SET-UP-PRINTER
FLIPFD

On the floppy disc in drive 1 slot 6 the EDASM.OBJ file is unpatched and the EDITOR has patch 3 applied. On the Flipper drive 1 in slot 5 the EDASM.OBJ has patch 1 applied and the EDITOR has patch 3 applied.

Once files have been created on the Flipper they should be saved to Flipdisks using the Flipper Program Manager

back-up workspace option.

The HELLO program is shown in Listing 1 and simply provides a menu of the following options:

- Run EDASM (the Toolkit Assembler) from slot 6.
- Run EDASM from slot 5.
- Set up the printer.
- Exit to Dos.

The SET-UP PRINTER program shown in Listing 2 provides the ability to set some of the more common printer options before executing the Toolkit Assembler. I find this rather more convenient than using the Toolkit Assembler to send strings of characters to the printer.

There are a few points regarding the SET-UP PRINTER program which are worth considering here.

At each prompt valid input is:

- Y for yes
- N for no
- (ESC) for exit
- (RETURN) to accept the value displayed (if any)

The options provided are:

- Initialise printer
- Set emphasised printing.
- Skip over perforations.
- Set American characters (so that a # is printed as a # and not as a £).
- Set condensed printing.
- Set enlarged printing.

These options can be changed by modifying the array SETTING\$

The codes sent to the printer are those required by an Epson MX-80 Type III. Other printer codes can be specified by modifying the array SETTING\$.

The array SETTING\$ is initialised at lines 150 to 410 with the following information:

- SETTING\$(I,0): The prompt used for option I.
- SETTING\$(I,1): The default (Yes/No) setting for option I.
- SETTING\$(I,2): The characters which need to be sent to the printer to activate option I.

At the start of each session I boot the Flipper Program Manager disc, select ▶

Option 3 to restore a work area from the Flipdisks containing the assembler files described above. When the Flipper Program Manager asks for a system disc to be inserted in drive 1 I put in the floppy disc containing the assembler files described above.

Once this has booted I normally set up the printer and then run the Toolkit Assembler from slot 5, load the data file I need from slot 6 drive 3, save it to slot 5 drive 2 and away I go.

In practice this is less of a chore than it seems. But if I do not wish to bother with setting up the Flipper I can boot directly from the Floppy without using the Flipper Program Manager disc, and either ignore the presence of the Flipper entirely, or just use it for temporary data storage.

After years of waiting for the Editor and the assembler to load from disc, and waiting through the disc based assembly of my programs I find the speed and silence of using Flipper a somewhat, eerie, but extremely pleasant, change.

My only regret is that the version of the Flipper Program Manager which I have does not save the files from drive 2 of the Flipper when it is operating in Dos 3.3, but that is not a serious problem with the configuration described above.

Postscript

This article was based on the performance of the software which was originally supplied with my Flipper card in autumn 1986.

One feature of that software is that the machined code program FLIP for use with Dos 3.3 could not be used satisfactorily from within a Basic program, hence the "IN#5" in line 90 of Listing 1 instead of the more elegant "BRUN FLIP".

The reason for the problem was that FLIP always exited to Dos and did not return control to the Basic program from which it had been called. Another feature of that software is that the Flipper Program Manager does not save the files from drive 2 of the Flipper when backing up a Dos 3.3 workarea to Flipdisks.

Happily, having explained these (and other) problems to Cirtech I was supplied with new software for the Flipper which solved the above problems, though it does not solve all the problems I raised. For those of you who also have the new Flipper software I suggest you copy FLIP on to your assembler disc and replace the "IN#5" in line 90 of listing 1 with "BRUN FLIP".

The ability of the new software to backup the contents of the Flipper's drive 2

now means that Flipdisks can be used for long term storage of files. This is what I now do and I use the discs in Slot 6, Drive 3 for storing archive backup copies.

To check whether you have the old or new version of the Flipper Program Manager, try saving files on to drive 2 of a Flipper Dos 3.3 workarea, use the Program Manager to backup the workarea on the Flipdisks, clear the workarea, then restore the workarea from the Flipdisks. If your files in drive 2 are intact you are in luck.

To check whether you have the old or new version of the Dos 3.3 FLIP program, make sure FLIP is on a disc in the default drive and then run the following Basic program:

```
10 HOME
20 PRINT "SORRY - OLD VERSION OF FLIP"
30 PRINT CHR$(4);"BRUN FLIP"
40 HOME
50 PRINT "OK - NEW VERSION OF FLIP"
60 END
```

If any of you are changing from the old software to the new then you will need to be a little careful. Flipdisks created with the old Program Manager do not appear to be readable by the new one. But then again, I am sure you all have your software safely backed up on standard formatted floppies. □

Brilliant, yet fun to use

Jaromic Smejck ends his review of word processors with a detailed look at MultiScribe

Last year one of my friends from the USA who knows about my special needs sent me MultiScribe, a ProDOS word processor from StyleWare Inc. After having worked with it I started to believe that my search was perhaps over.

The first version I got (1.01) was in my opinion more a beta test than a finished product because the Find and Replace functions were bug-ridden – subsequently ironed out in version 1.20.

The current version 2.00A, with font editor version 2.00B (ProDOS 8, Ver.1.2, based and in the USA on the market since January) has many new, additional attributes.

It is now a mature, very good, and vastly improved product with many attractive features. The following review is based on this contemporary version 2.00A (2.00B for font editor).

Comparing MultiScribe with other Apple II-compatible word processors using hi-res and having the ability to create user definable fonts in a minimum matrix of 7 × 12 is clearly a full horse length victory for MultiScribe.

I compared it with features of Gutenberg, Format-80 Scientific, The Linguist (which is another version of Format-80 Enhanced), Master Type's Writer and also with Fontrix, Ver. 1.5. (Oh yes, you can create and print normal documents with Fontrix too – but slowly and there are other problems.)

And if you compare the prices (in the USA US\$69.95) you will know that you have found a real gem. Not flawless, but really great gems seldom are.

Mixed fonts

MultiScribe is easy and fun to use and learn, besides being a superb piece of conceptual brilliance. With pull-down menus using plain text only – icons for page number, date and time are in header and footer dialogue boxes only – you can be typing your first document in a matter of minutes.

For example, only in MultiScribe, of all the programs using hi-res graphics (not just word processors) can you delete one character regardless of the font, size, shape and so on by one stroke of the Delete key regardless of the variety of mixed fonts and sizes within a single line. This was never possible before MultiScribe.

Usually you can enter a single character of different matrix size within a single line with one keystroke, but deleting it can take

a lot of cursor movements and is always a frustrating and time-consuming process.

MultiScribe works on a 128k Apple IIe, enhanced IIe, IIc, and IIGS in double hi-res graphics with bit mapped graphics. Pull-down menus allow you to choose in the editing mode between different fonts (10 are included), sizes, styles, Open (load) and Save functions and to switch to a separate font editor.

You can change the font, the style of the letters and the size of the letters as you type, or you can later Select (with OA and arrow keys to highlight the selected item) and then establish a new font, style or size in particular sections of the document.

You can Select for other purposes as well arbitrarily part of the text or all document, Rulers, Page breaks. You can Delete, Copy, Cut and Paste, the last three choices being done via a disc-based clipboard which is also usable for transfers between different documents.

The characters are the best looking and most readable I have seen. You see exactly the different fonts, sizes and shapes. This is a real WYSIWYG word processor.

In editing mode only the effects of text justification, headers and footers are not displayed on the screen, but in the preview mode you do see all justification, headers and footers.

The printout character size is different from that on the screen (there the characters look taller and thinner and on the printout the characters are shorter and fuller), owing to the disparity in the screen height in pixels and the printer's ability to print in a better vertical resolution.

Because practically all fonts are created with regard to the printed result, this difference doesn't really matter. The only exception here is the otherwise useful font Michelangelo, which has many symbols, but which look OK only on the screen. On the printout all symbols are squashed and a circle is ellipsoid. Why this font is designed in this way is a bit of a mystery to me, but if you get another good looking nine fonts with that software, who cares? All fonts except the Standard font are named after

famous authors such as Shakespeare, Milton, Hemingway and Asimov (see Figure 1). The package supports proportional fonts and printing.

It has Macintosh-like menus, but in one aspect it is more friendly to the user – you can use menus and give the command with the mouse, or you can use the keyboard cursor keys (MultiScribe calls this option Keyboard mouse).

You can also invoke most commands directly without menu, mostly by pressing OA + the assigned character, like the commands in AppleWorks. You can naturally mix all these kinds of commands. If you forget the direct keyboard command you press Escape and you are in the menu commands mode.

Very nice is the invert screen feature, which allows you to work with a dark background and light characters or the other way round, as you wish.

I like to work with a light amber background and dark text on the screen, because I find that if your eyes are alternatively looking at white paper with text and the screen, it is best to have both backgrounds light to cut eye strain.

Graphics image

There is a problem with the interlaced mode used to produce the double hi-res graphic on the display. If you are working with a light background you have to use a monitor with a long-persistence phosphor as low-persistence phosphor gives a shimmering image.

This can be eliminated by working with a dark background on monitors with low-persistence phosphor or by using a monitor with long-persistence phosphor. Working with a dark background solves this problem, but then you lose the advantage of the bright background display.

You can work with 16 fonts and mix them freely in your text. With 128k of memory you will be able to work with about six different fonts permanently in memory.

If you so choose the program deletes one without bothering you, making place for a new one. The system works fully automatically on the principle of first in, first out.

You can at any time reload the deleted font with one keystroke.

With each font you have at your disposal 11 principal styles – plain, underlined, italics, bold, shadow, outline, inverted, tall, ▷

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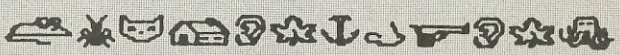
Standart Hemingway Wordsworth Mark Twain Milton Dante Asinow
 Chaucer Shakespeare 
 HEMINGWAY: Plain *Italics* Underline Shadow bold Outline bold
 superscript bold subscript Inverted bold Tall bold Wide bold
 Plain 1.5x Bold 2x Plain 2.5x
 Bold 3x

Figure I: Fonts are named after authors

wide, superscript and Subscript, plus any combination.

To create an underlined bold character (or word, or sentence or whole blocks of text) in italic and in a wide variation you need only four keystrokes.

As you are working you will see all these changes on the screen immediately after you invoke a command, together with all changes in the sizes and shapes of the characters, words and sentences.

You can magnify a character up to three times its normal size in four steps – 1.5x, 2x, 2.5x and 3x – the maximum size being 75 point. Did you know that with MacWrite the maximum printable size is 25 point only?

Magnifying your text 1.5x or 2x or using a wide option is a good choice for preparing a document designed for easy reading – letters to senior citizens, texts for lectures and so on.

A text magnified up to 3x and mirrored is very good for transferring to T shirts. See Figure I for fonts, some styles and sizes.

MultiScribe uses only an insert mode, having no overwrite mode, but I do not consider this a deficiency. You can insert rulers anywhere in the document and set both margins, 10 tabs, indentation, four justifications (left, right, centre and full) and also choose between three kinds of spacing, 0 with 11 lines on the screen, 1 with 8 lines on screen and 2 with 6 lines on screen (Standard font height).

No spacing between lines (Spacing: 0 as the ruler option) is another efficient speciality of this program, because this is good for creating oversized, big mathematical, musical or other multi-line symbols simply by entering an appropriate array of corresponding characters in two or more lines.

Unfortunately an overlay function is not supported by MultiScribe, so I have to create these oversized symbols successively always starting from the top (see Figure II).

But you can work with 16 fonts at once, and this is more than enough for all special symbols, because you will have at your disposal more than 1,500 characters, without counting different styles and sizes.

For example, in Format-80 Scientific you can work with a maximum of three fonts and it is a more expensive, special word

processor dedicated to producing text with scientific symbols.

In Figure II I didn't create a complete font – only a few special symbols as illustration for eventual possibilities. But I am sure that in the very near future such a font will be included in the optional FontPaks (see details later).

Backup copies

You can Save a document that's been named to the current disc. You use option Save As when you want to be careful or save a current document under a different file name or path name or to a different disc. That option allows you to make backup copies during the edit session.

The Save As command is carried out in two steps, and therefore protects you from a wrong choice. You can save text, not only as MultiScribe old and new (for version 2.00 only) formats, but also as a plain Ascii file (stripped of all formatting commands) which is essential for transfer to other programs or via a modem. You will also see in

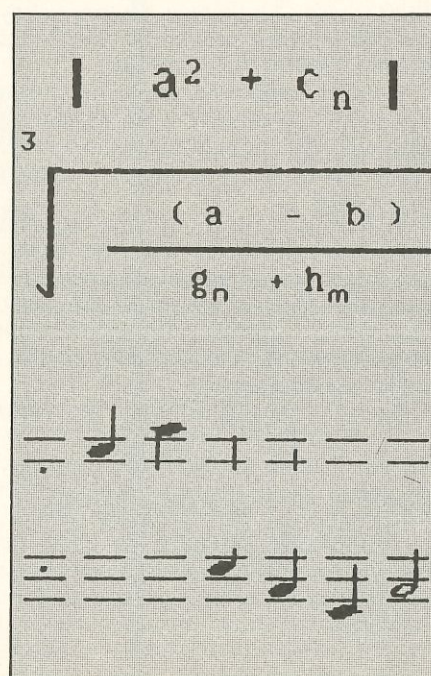


Figure II: Special symbols

the Save dialogue box the number of available free blocks on the chosen disc.

Command execution speed varies from very quick to slower. As with all word processors using a double hi-res graphic screen MultiScribe is slower than word processors using only a text screen. You can type moderately fast, but you will have to wait a few seconds if you are at the end of a lengthy document and wish to look at the first page by means of the OA-1 command.

There is an analogous wait for some other commands as well – moves, deletions, scrolling, changes to on-screen tabs, margins, fonts and their style or size.

The Header and Footer dialogue boxes allow you to create headers and footers – single line information you want to print at the top respectively bottom margin on every page of a document – and to specify, where you want them to appear within the top or bottom margins.

The text you place in the header or footer can be of any font and character size, and any combination of character size, but (this is not mentioned in the addendum to the manual) you have to choose these options before you invoke the Set Header command.

The Header and Footer dialogue boxes also contain icons for setting the page number, date and time and an inch scale for determining where on the page to place these icons.

Page boundaries are clearly marked by a dashed line across the screen and also you have on the right side of the screen a scroll bar which always indicates your cursor position in the document. You can also use the scroll bar to move to a new place in the document.

With the Page Setup dialogue box you can choose from four standard paper sizes – US letter (8.5in x 11in), US legal (8.5in x 14in), A4 letter (8.5in x 11.66in) and International fanfold (8.25in x 12in) and specify your own non-standard paper (restrictions are a maximum of 14in and a minimum of 3in), both top and bottom margins and the special value called page indent for centering the print on wide carriage printer paper.

In the Print dialogue box you can fully specify the page range for printing, choose between continuous or single page print-

Hemingway Mark Twain Milton Chaucer Shadow

Hemingway Mark Twain Milton Chaucer Shadow

Hemingway Mark Twain Milton Chaucer Shadow

Hemingway Mark Twain Milton Chaucer Shadow

Hemingway Mark Twain Milton Chaucer Shadow

Hemingway Mark Twain Milton Chaucer Shadow

Figure III: From top to bottom: Epson FX-85: Standard printer draft characters, standard printer NLO mode only for printing definite documents. MultiScribe: Draft quality graphic printing, standard quality graphic printing, high quality graphic printing and NLO1 quality graphic printing.

ing, numbering pages or not and also between five graphic modes of printing: NLO1 (8), NLO2 (8), High (6), Standard (4), Draft (2) and one normal mode: Text. The number in parenthesis indicates how many times the printing head goes over one line – in the graphic mode always unidirectionally from left to right.

Printing in NLO (Near Letter Quality modes) is really slow, but the result would be better described as NPQ (Near Print Quality).

When printing in High and NLO modes it is better to use a normal worn ribbon, not a new one.

The Text mode is another speciality of MultiScribe – it does not print documents as they appear on the screen in printer graphics mode, but rather prints documents as the stripped down version without the special embedded printer control commands for graphic mode using the printer's own character set and therefore does not print different fonts and styles. It is by far the fastest print mode.

If you have a downloadable font on your printer you can almost have the best of both worlds with this print mode setting.

It is useful to preset your printer for printing in proportional mode, because MultiScribe sets the screen text as if proportional and that means there are more characters per inch than the normal 10, on average 11-12 characters per inch. If your printer cannot print in proportional mode, don't use more than six inches between margins, otherwise it can happen that the printer will not be able to print the whole line, printing the second part as a second line.

I created the downloaded font for my Epson FX-85 printer by means of the very good font editor and downloader program DMP Utilities from Brother Vilberg USA, which includes 20 different proportional fonts for Epson FX printers with all the

accented characters and special symbols.

Then I use the Text mode to print drafts for proofreading. I use the Standard or NLO mode only for printing definite documents.

The result is very high speed for all printouts in the preparatory stages and high quality printouts when time is not so important.

It is worth pointing out that a printer with downloadable font will revert to normal Text mode after printing in the bit image mode.

The font editor, which has a matrix changeable from 1x1 to 28x28 points, is one of the best I have used and I have used more than 10. You can edit all 96 characters. The complete range of editing commands, including Vertical flip (Mirror), Horizontal Flip, Shift, Undo, allow for comfortable design of your own characters.

Creating fonts

The transfer of a character from one font to another is simplicity itself and is not found in other font editors. For example, for special effects (see Figure IV) or for printing on T shirts you can convert characters to mirrored ones. And remember, you can create fonts not only with symbols and graphics, but also with borders (for one type of border you need only eight characters.)

The biggest printable character size can be 75x75 points, that is 27x27mm and that is sufficient for almost all purposes. [Note that one point equals 1/72 of an inch, and on the screen is equal to one pixel.]

If you edit or create your own font from scratch. I would strongly recommend you to always create in each font one empty "character", 1 point (pixel) wide instead of a tilde or something. This character will help you to set other characters exactly in place if you want to create special effects

from two fonts (see word Shadow in Figure IV.)

One thing not mentioned in the manual is that the ratio of the Edit Window sides on screen is rectangular, not square, as in the manual. On the screen the Y axis is about 150 per cent of the X axis, that is the ratio 2:3. But the number of pixels on both axes are the same, and that is what counts.

If you make a rectangle around the border of the 28x28 matrix, save the font with this rectangle and use it in your text then on the screen this symbol will look rectangular but will be printed square.

For this reason, if you want to create new fonts, or complicated symbols, it is better to draw several square matrices of 28x28 on paper and design all the characters and symbols beforehand on this.

Afterwards transferring your design from paper to the editing window of the screen, row by row or column by column, will be quite simple.

Due to the use of a double hi-res screen it is also impossible to show the edited character in the font editor program in its real printing ratio, but instead you will see your character in plain style and five automatically created different styles in the style window (plain, bold, underline, italics, shadow and outline) in the display screen ratio and size.

You can remap the keyboard, and will find it useful that the spacebar is also user-definable. Because pressing space invokes no command in the edit font mode you can use it as a temporary transfer point. For example, if you want to exchange the locations of Y and Z on the keyboard layout you will follow this flowchart:

Get Y → Put Y to space → Get Z → Put Z to Y → Get space → Put space to Z → Get space → Clear edit window → Put space.

It is necessary to stress that changing the keyboard layout or affixing symbols instead ►

of characters to particular keys does not have any effect on any MultiScribe messages on the screen, nor on the input of commands.

You will always press the keys in the same location, even if they invoke a new character or symbol, to enter a command. So, if you made the change mentioned above exchanging the Y and Z keys you will now press OA-Z (originally OA-Y) keys to insert a ruler.

Safety measure

MultiScribe is not copy protected. You can format the data disc in the middle of your work, list all files, and delete files in two steps with warnings, from your disc. The Delete feature prevents you from deleting files essential to running the MultiScribe program itself, which is neat.

Other errors such as those generated by an open drive door or mistyped commands are effectively trapped. It is practically impossible to accidentally exit from MultiScribe. The Unidisk 3.5 in drives are supported.

The Install Accessories command allows you to install (and remove) online accessories which can be run directly from MultiScribe. You can install up to 15 additional accessories and transfer MultiScribe to ProDos 8 compatible hard discs, or ram discs. Apple's Memory Expansion Card, Applied Engineering's RamWorks and Checkmate Technology's MultiRams are detailed in the addendum to the manual.

An additional feature is that MultiScribe automatically detects the Apple Memory Expansion Card and treats it as a ram drive. However, MultiScribe ProDos 8 didn't detect the Flipper and that's after installing it on the Flipper using the Flipper Ram Manager. I got an error message on screen not documented in the ProDos documentation - **Relocation/Configuration Error** - and the system was locked.

Deep freeze

This was my first encounter with ProDos 8 and it seems to be different from ProDos Ver. 1.1.1, because instead of the usual 30 blocks the new ProDos 8 occupies 32 blocks.

As a remedy I again installed MultiScribe Ver. 2.00 on the Flipper with ProDos 1.1.1. This combination works, everything seems to be fine, but in a one hour working session MultiScribe was twice teletransported to Monitorland and ended there in deep freeze.

This was very unusual, although my Flipper had previously perpetrated such practical jokes and arranged teletransports to these inhospitable regions, but never more than twice a week or so.

The only advantage for me is that I know from two very bitter lessons that frequent saving of partial document is the only safe

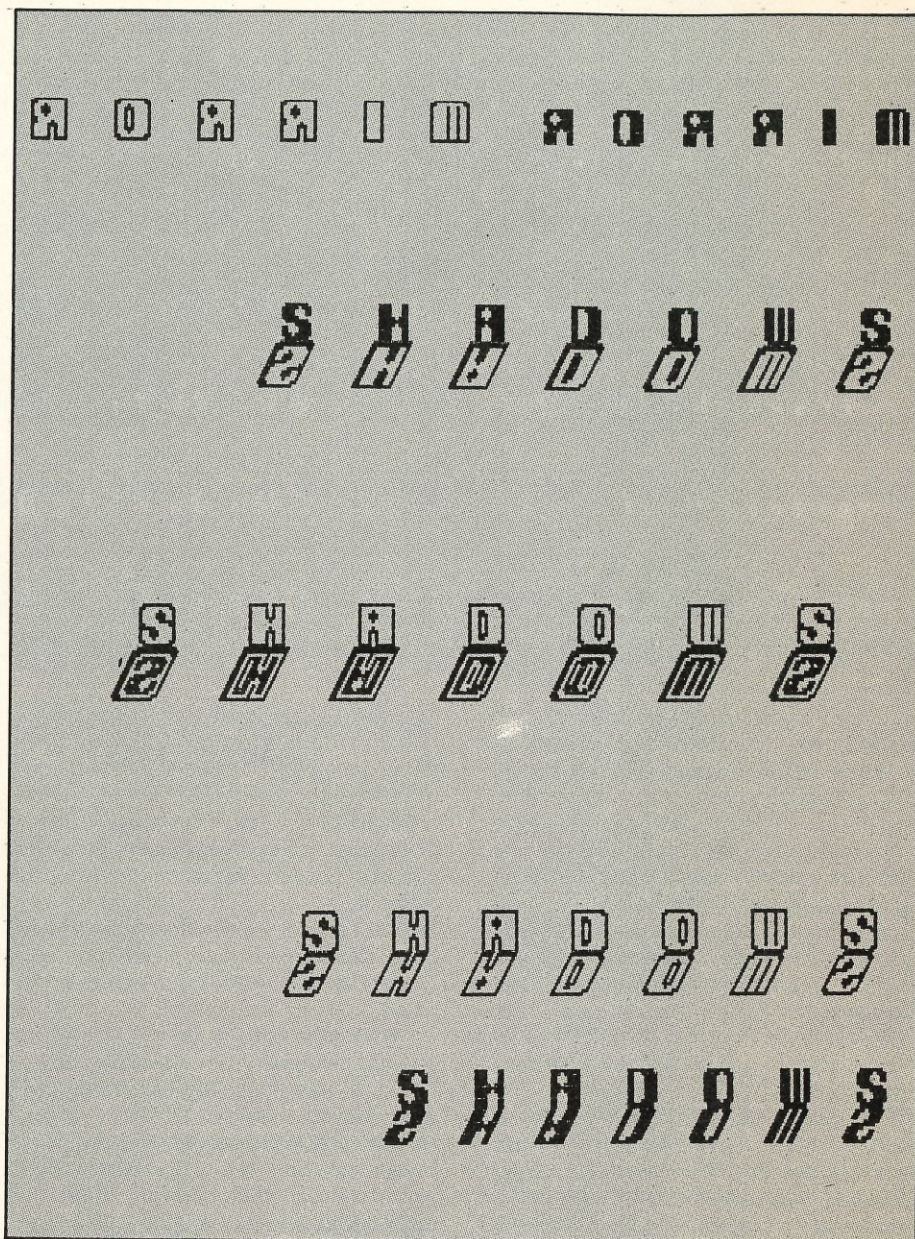


Figure IV: Creating special effects

way; that is if you don't like to weep.

Clearly the question of the advertised full compatibility of the Flipper with Apple's Extended Memory Card standard, and secondly the question of the new ProDos 8 compatibility with ProDos Ver. 1.1.1 inevitably arises.

With the configuration program, Printer setup (accessible from the main menu) you can set the basic parameters including type of printer, interface card, and slot where it is installed. MultiScribe supports the following printers: Apple DMP, Imagewriter and Scribe; Epson FX, MX and RX lines; Star Micronics Gemini 10x, ST-10; Okidata 92, 93, 192, 193; C.Itoh Prowriter/NEC 8023.

The list of supported interface cards is impressive - 45 in all. I cannot mention them all here, but they include all the usual cards from Apple (incl IIc port), Epson, Grappler, Micronix, Microtek, Prometheus, Tymax, and Videx. The Apple IIe compatible Laser 128 port is also added.

The optional programs, which I have not

yet had an opportunity to test, seem more than worth mentioning according to their detailed descriptions.

All are designed for use with MultiScribe 2.00 on the 128k Apple IIe/IIc or IIGS with or without mouse and can be used with MultiScribe or installed directly into disc. After having tested them thoroughly I will be able to tell you much more.

Disc Accessories

- Full scientific calculator giving all maths functions, including trigonometric and with a memory.

- Clock which can be used to time-stamp documents.

- Calendar to help plan your schedule in advance.

- Control Panel with macros, sound control and cursor speed adjustment.

- Puzzle offers a break from work with an intriguing game.

FontPaks

- Additional fonts are available in packages of 10. Most look really nice.

MultiScribe Spell Checker

- This utility is designed for installation into the MultiScribe disc and provides online use.

- 40,000 word dictionary has room for your own additional words.

- Scanning word list for alternate spellings.

Picture Manager

- Working online inside MultiScribe lets you bring pictures without leaving MultiScribe right into documents.

- You can choose a specific portion of your picture to include and copy up to 15 parts of one or more pictures per document

- Working with normal hi-res or double hi-res pictures

- Pictures can be moved, combined with text or modified with Font Editor if desired, giving you a creative edge not available with MacWrite/MacPaint.

Two programs are available for 512k Apple IIGS - MultiScribe IIGS and TopDraw. The former has new features compared with MultiScribe 2.00 on the Apple IIc/IIe, notably multiple document windows and

compatibility with ImageWriter and LaserWriter with adjustable print quality.

TopDraw is the first object-oriented graphic program for the Apple II family, giving users the ability to create drawings which can be moved, edited or coloured.

The most interesting features are enlarged format drawings up to several pages, a wide variety of graphic tools, text options and compatibility with colour ImageWriter II and LaserWriter.

The MultiScribe document is very well written, superb in clarity, logically ordered with a tutorial, a complete reference section, a summary of all commands, index and a series of appendixes that cover printers and interface cards, hard disc and ram card installation options.

If you upgrade from a previous version to Ver. 2.00 you will not get a new manual, but a very detailed addendum.

The combination of mature, accessories and a superb manual make MultiScribe a winner in performance to price ratio, and in my opinion is the best of the Apple II word

processors using graphics modes and one of the best of all Apple II word processors.

With MultiScribe and Picture Manager you can print a presentation to a client, a press release, greeting card, flyer, invitation, award, certificate, storyboard, poster and anything than requires graphic and text in one document.

Your printouts will look very nice, professionally made, but of course, with reduced printing speed.

But remember that choosing only a few of the available options for fonts, styles and sizes for your document will produce a better result than if you use a wide spectrum of options.

Happy and creative computing for all of you.

Product: MultiScribe 2.0

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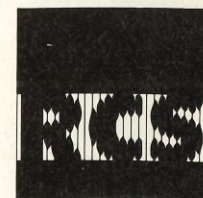
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Paddles bypass

THE cursor routine in the Apple User's Graphics Library (Apple User, April 1984, page 72 and Graphics Library Disc) which permits the use of paddles to read values from the screen, works very satisfactorily. However, these days not everyone has paddles or is willing to fit them to the computer.

It is possible to do without them by using the subroutine in the listing to replace lines 41700 to 41990 of the original listing.

The new routine makes use of two

An alternative cursor routine for the Graphics Library, by William Davies

PEEKs which allow the Apple to know whether or not a key has been pressed and if so, which key it is. These are in lines

41761 and 41762.

Use is made of the two diamond shaped clusters of letters on the keyboard consisting of W, D, Z, A and T, H, V, F to move the horizontal cursor up (W), down (Z) one pixel at a time or up (T) and down (V) 10 pixels at a time.

In the same way the vertical cursor may be moved to the left or right using A, F or D, H. In addition pressing S stores the current cursor value (in user units) in the array ZD(ZI). To leave the routine use key E.

```

41700 HOME
41705 ZI = 0
41710 ZC(6) = 140
      :ZC(7) = 80
41730 HTAB 5
      :VTAB 22
      :CALL - 868
41740 ZC(1) = INT (( FN UXCN
      (ZC(6))) * 1000)
      / 1000
      :ZC(2) = INT (( FN UYCN
      (ZC(7))) * 1000)
      / 1000
41742 PRINT "X=" ;ZC(1);
      TAB( 20);"Y=" ;ZC(2)
41745 IF FLAG = 10 GOTO 41760
41750 XDRAW 9 AT 0,ZC(7)
41755 IF FLAG = 9 GOTO 41761
41760 XDRAW 10 AT ZC(6),0
41761A = PEEK ( - 16384)
      :REM READ THE KEYBOARD

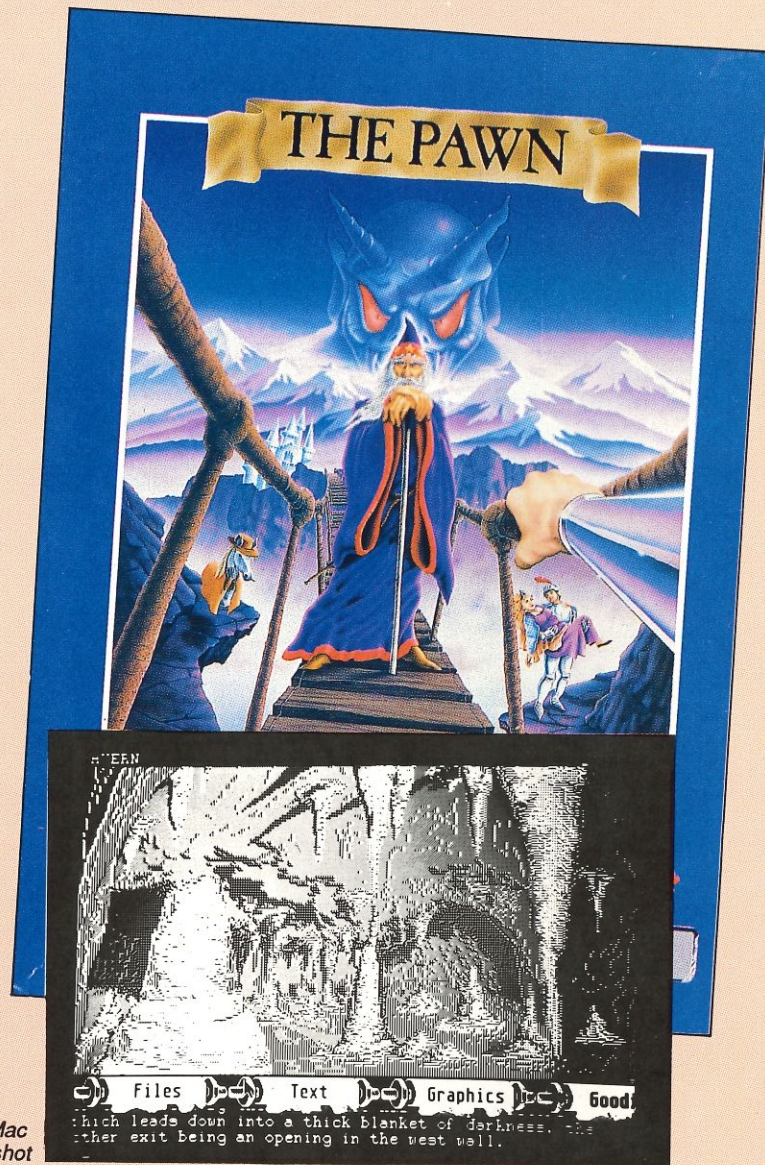
41762B = PEEK ( - 16368)
      :REM RESET KEYBOARD
41763 IF A < 128 THEN 41761
41764K = A - 128
41765 IF K = 65 THEN XDRAW 1
      0 AT ZC(6),0
      :FLAG = 10
      :ZC(6) = ZC(6) - 1
      :IF ZC(6) < 1 THEN ZC(6)
      = 1
      :GOTO 41730
      :REM MOVE CROSSWIRE LE
      FT
41767 IF K = 70 THEN XDRAW 1
      0 AT ZC(6),0
      :FLAG = 10
      :ZC(6) = ZC(6) - 10
      :IF ZC(6) < 1 THEN ZC(6)
      = 1
      :GOTO 41730
      :REM MOVE CROSSWIRE L

      EFT BY 10
41769 IF K = 68 THEN XDRAW 1
      0 AT ZC(6),0
      :FLAG = 10
      :ZC(6) = ZC(6) + 1
      :IF ZC(6) > 279 THEN ZC(
      6) = 279
      :GOTO 41730
      :REM MOVE CROSSWIRE R
      IGH
41771 IF K = 72 THEN XDRAW 1
      0 AT ZC(6),0
      :FLAG = 10
      :ZC(6) = ZC(6) + 10
      :IF ZC(6) > 279 THEN ZC(
      6) = 279
      :GOTO 41730
      :REM MOVE CROSSWIRE
      RIGHT BY 10
41773 IF K = 90 THEN XDRAW 9
      AT 0,ZC(7)
      :FLAG = 9
      :ZC(7) = ZC(7) + 1
      :IF ZC(7) > 159 THEN ZC(
      7) = 159
      :GOTO 41730
      :REM MOVE CROSSWIRE
      DOWN
41775 IF K = 86 THEN XDRAW 9
      AT 0,ZC(7)
      :FLAG = 9
      :ZC(7) = ZC(7) + 10
      :IF ZC(7) > 159 THEN ZC(
      7) = 159
      :GOTO 41730
      :REM MOVE CROSSWIRE
      DOWN BY 10
41777 IF K = 87 THEN XDRAW 9
      AT 0,ZC(7)
      :FLAG = 9
      :ZC(7) = ZC(7) - 1
      :IF ZC(7) < 1 THEN ZC(7)
      = 1
      :GOTO 41730
      :REM MOVE CROSSWIRE
      UP
      :GOTO 41730
      :REM MOVE CROSSWIRE
      UP
41779 IF K = 84 THEN XDRAW 9
      AT 0,ZC(7)
      :FLAG = 9
      :ZC(7) = ZC(7) - 10
      :IF ZC(7) < 1 THEN ZC(7)
      = 1
      :GOTO 41730
      :REM MOVE CROSSWIR
      E UP BY 10
41782 IF K = 83 THEN ZI
      = ZI + 1
      :ZD(ZI) = ZC(1)
      :ZI = ZI + 1
      :ZD(ZI) = ZC(2)
      :HTAB 3
      :VTAB 23
      :CALL - 868
      :PRINT "NOS. ";ZI - 1;"&"
      ;ZI;" STORED"
      :GOTO 41761
      :REM STORE CO-ORDNS
41783 IF K = 69 THEN GOTO 41
      930
      :REM END & EXIT
41785 GOTO 41730
41860 CALL - 198
41930 REM EXIT CURSOR R/T
41940 HOME
      :IF ZF = 1 THEN POKE
      - 16302,0
      :REM FULL SCREEN
41950 XDRAW 9 AT 0,ZC(7)
41960 XDRAW 10 AT ZC(6),0
41970 SCALE= ZI
      :ROT= 22
      :REM RESTORE SCALE &RO
      T
42000 RETURN
  
```


Lose yourself in the magical world of Kerovnia!

This fascinating adventure features the most sophisticated parser around: You can type complex sentences and interact with the many characters, including some very intelligent animals.

This superb package includes a 44-page novella and a cryptic help section.



Apple Mac screenshot

"Overall the atmosphere is beautifully evocative and the gameplay excellent"

— Paul Gardener, Apple User, February 1987

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Take your pick

Put aside that spreadsheet for a while and enjoy the lighter side of computing with this engaging multi-choice quiz by Roger Deacon-Smith. Follow the instructions in lines 160 to 200 and put in your own questions and answers.

```

100 TEXT : HOME : GOTO 370
110 :
120 :
130 :
140 REM PUT QUESTIONS
150 REM IN DATA
    STATEMENTS
160 REM 1ST STRING =
    QUESTION
170 REM STRINGS 2-6 =
    ANSWERS
180 REM 7TH STRING =
    STRING NOS
190 REM (1-5)
200 REM OF CORRECT
    ANSWERS
210 :
220 :
230 :
240 REM SCORE = % RIGHT
    ANSWERS - % WRONG ANSWERS
250 :
260 :
270 REM LINES60-90 =
    SUBROUTINES
280 :
290 :
300 :
310 IF PEEK ( - 16384 ) <
    128 THEN 310
320 POKE - 16368,0:A$ =
    CHR$ ( PEEK ( - 16384 )) :
    RETURN
330 VTAB 3: HTAB 1: CALL -
    860: FLASH : PRINT " ":
    NORMAL : PRINT S$ :
    RETURN
340 VTAB V: HTAB 1: PRINT
    C; ". " ; A$(C) : RETURN
350 VTAB V: HTAB 1: INVERSE
    : FOR C = 1 TO 40: PRINT
    " " : NEXT : NORMAL :
    RETURN
360 VTAB V: HTAB 1: FOR C =
    1 TO 40: PRINT "- " : NEXT
    : RETURN
370 :
380 ONERR GOTO 970
390 V = 2: GOSUB 350
400 VTAB 1: PRINT "
    MULTI-CHOICE QUESTIONS"
410 VTAB 1: HTAB 35: PRINT
    "QU. "
420 V = 4: GOSUB 350
430 V = 23: GOSUB 360

```

```

440 POKE 34,4: POKE 35,22
450 N = N + 1
460 READ Q$: FOR C = 1 TO
    6: READ A$(C): NEXT : REM
    READ QU & ANSWERS
470 VTAB 5: CALL - 950:
    VTAB 6: HTAB 1: PRINT
    Q$; " ?"
480 VTAB 1: HTAB 39: CALL
    - 860: INVERSE : PRINT
    N; : NORMAL
490 V = 9: GOSUB 360
500 FOR C = 1 TO 5: V = 8 +
    2 * C: GOSUB 340: NEXT
510 V = 20: GOSUB 360
520 S$ = "SELECT CORRECT
    ANSWERS THEN (RETURN)":
    GOSUB 330
530 PR# 1
540 PRINT : PRINT CHR$
    (9)"IS"

```

This is one of hundreds of programs now available FREE for downloading on

MicroLink

```

550 PR# 0
560 VTAB 21: HTAB 1: PRINT
    "YOUR CHOICES : ";
570 GOSUB 310
580 I = 0
590 I = I + 1
600 FOR C = 1 TO 5: IF A$ =
    MID$ ("12345",C,1) OR A$
    = CHR$ (13) OR A$ =
    CHR$ (8) THEN 620: REM
    CHECK FOR VALID RESPONSE
610 NEXT C: PRINT CHR$
    (7); I = I - 1: GOSUB
    310: GOTO 590
620 FOR C = 1 TO I - 1: IF
    A$(C) = A$ THEN I = I -
    1: GOSUB 310: GOTO 590
630 NEXT C: REM CHECK TO
    ENSURE NO REPEATS
640 INVERSE
650 VTAB 21: HTAB 14 + I *
    2: A$(I) = A$: IF A$ < >
    CHR$ (13) AND A$ < >
    CHR$ (8) THEN PRINT
    A$(I); : IF I < 5 THEN
    GOSUB 310: GOTO 590
660 IF A$ = CHR$ (8) THEN
    I = I - 1: HTAB 14 + I *

```

```

2: NORMAL : PRINT " ";
    INVERSE : GOSUB 310: GOTO
    620: REM IF BACK ARROW
    THEN ERASE PREVIOUS
    ANSWER
670 NORMAL
680 VTAB 22: HTAB 1: PRINT
    "RIGHT ANSWERS: ";
690 INVERSE
700 VTAB 22: FOR C = 1 TO
    LEN (A$(6)): HTAB 14 + C
    * 2: PRINT MID$
    (A$(6),C,1); : NEXT
710 NORMAL
720 IF A$ = CHR$ (13) AND
    I = 1 THEN 820
730 :
740 REM CALCULATE RUNNING
    TOTALS OF RIGHT & WRONG
    ANSWERS
750 :
760 FOR J = 1 TO I - 1
770 FOR C = 1 TO LEN
    (A$(6))
780 IF A$(J) = MID$
    (A$(6),C,1) THEN RA = RA
    + 1: C = LEN (A$(6)): FL =
    1: GOTO 790
790 NEXT C
800 IF FL < > 1 THEN WA =
    WA + 1
810 FL = 0: NEXT J
820 TR = TR + LEN (A$(6))
830 RZ = RA / TR * 370: WZ =
    WA / (N * 5 - TR) *
    370: TX = RZ - WZ
840 VTAB 24: HTAB 1: CALL
    - 860: PRINT
    "CORRECT: "; RA; "/"; TR; "
    WRONG: "; WA; "/"; (N * 5 -
    TR); " SCORE = "; TX; " %";
850 S$ = "PRESS (RETURN)
    WHEN READY": GOSUB 330:
    GOSUB 310: IF A$ < >
    CHR$ (13) THEN PRINT
    CHR$ (7): GOTO 850
860 GOTO 450
870 :
880 :
890 REM QUESTIONS IN DATA
    STATEMENTS
900 :
910 :
920 DATA WHAT IS THE
    CAPITAL OF ENGLAND,NEW

```

```

YORK,PARIS,ROME,LONDON,MAD
RID,4:
930 DATA WHICH NUMBERS ARE
    DIVISIBLE BY
    12,34,36,60,84,92,234:
940 DATA WHICH OF THE
    FOLLOWING ARE
    PLANETS,PLUTO,THE
    PLOUGH,SIRIUS,MERCURY,ORIO
    N,14:
950 DATA THE BEATLES
    WERE,JOHN LENNON,MARTY
    WILDE,RINGO STARR,GEORGE
    HARRISON,BILLY FURY,134:
960 DATA 100 DEGREES
    CENTIGRADE IS,THE BOILING
    POINT OF WATER,212
    DEGREES FARENHEIT,32
    DEGREES FARENHEIT,THE
    FREEZING POINT OF
    MERCURY,HOT,125:
970 POKE 216,0
980 PRINT CHR$ (7): IF
    PEEK (222) < > 42 THEN
    1050: REM OUT OF DATA
    ERROR DETECTS END OF
    QUESTIONS
990 HOME : VTAB 10: HTAB 1:
    CALL - 860: PRINT "YOUR
    FINAL SCORE WAS : "; TX
1000 IF TX < - 50 THEN
    PRINT : PRINT : PRINT
    "DON'T ENTER FOR
    MASTERMIND WILL YOU !":
    GOTO 1040
1010 IF TX < 0 THEN PRINT
    : PRINT : PRINT "ABYSMAL!
    GO BACK TO SCHOOL!": GOTO
    1040
1020 IF TX < 50 THEN PRINT
    : PRINT : PRINT "FAILED ! -
    BUT NOT AS
    BADLY AS SOME !": GOTO
    1040
1030 PRINT : PRINT : PRINT
    "CREEP! WHAT MAKES YOU SO
    CLEVER HUH?"
1040 FOR C = 1 TO 3000:
    NEXT : POKE 34,0: POKE
    35,24: TEXT : HOME : END
1050 TEXT : HOME : PRINT
    "SORRY BUT ERROR CODE ";
    PEEK (222)
1060 END

```


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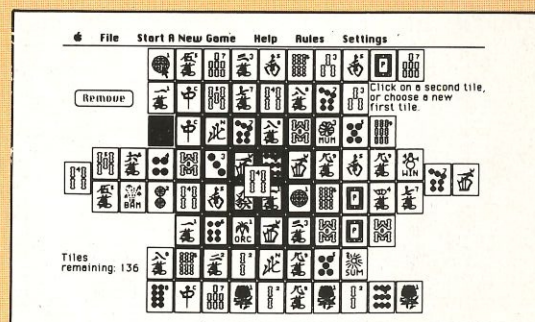
SHANGHAI is based around the 3,000-year-old Chinese game Mah Jongg which took the US by storm during prohibition in the 1920s – and promptly got banned when it turned many unsuspecting gamers into ivory tile addicts.

The game consists of 144 tiles depicting flowers, seasons, dragons, the wind and more. These are stacked up to five tiles high in the Dragon formation.

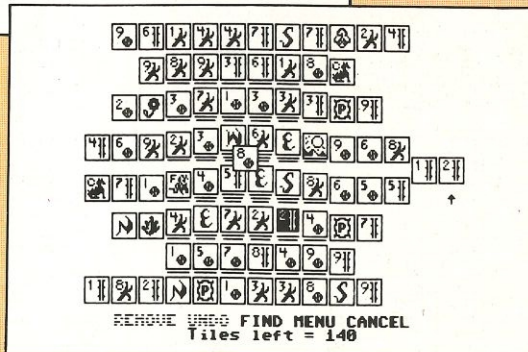
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Feature

The Ultra approach

Concluding the listing for Colin Davies' cypher system program

```

86C8: 772 *****
86C8:68 773 MSGOUT PLA ;SAVE RETURN ADDRESS
86C9:85 08 774 STA TEMP
86C8:68 775 PLA
86CC:85 09 776 STA TEMP+1
86CE:A0 00 777 LDY #0
86D0:E6 08 778 LOOP2 INC TEMP ;MOVE RETURN PAST DATA
86D2:D0 02 779 BNE SKIP2
86D4:E6 09 780 INC TEMP+1 ;PAGE BOUNDARY
86D6:B1 08 781 SKIP2 LDA (TEMP),Y ;FETCH A CHAR
86D8:F0 0C 782 BEQ EXIT4 ;STRING END INDICATOR
86DA:C9 AF 783 CMP #'/'
86DC:D0 02 784 BNE OUT
86DE:A9 A0 785 LDA #*A0 ;CONVERT TO SPACE
86E0:20 ED FD 786 OUT JSR COUT ;OUTPUT A CHAR
86E3:4C D0 86 787 JMP LOOP2
86E6:A5 09 788 EXIT4 LDA TEMP+1 ;RESTORE RETURN ADDRESS
86E8:48 789 PHA
86E9:A5 08 790 LDA TEMP
86EB:48 791 PHA
86EC:60 792 RTS
86ED: 793 *****
86ED:20 DD FB 794 BUFULL JSR BELL
86F0:20 DD FB 795 JSR BELL
86F3:20 C8 86 796 JSR MSGOUT ;OUTPUT #MESSAGE
86F6:8D 797 DFB #8D ;CARRIAGE RETURN
86F7:C2 D5 C6 798 ASC 'BUFFER/FULL'
86FA:C6 C5 D2
86FD:AF C6 D5
8700:CC CC
8702:8D 799 DFB #8D
8703:D4 CF AF 800 ASC 'TO/ABORT/USE/CTRL-A'
8706:C1 C2 CF
8709:D2 D4 AF
870C:D5 D3 C5
870F:AF C3 D4
8712:D2 CC AD
8715:C1
8716:8D 801 DFB #8D
8717:D4 CF AF 802 ASC 'TO/PROCESS/TEXT/USE/ESC-->'
871A:D0 D2 CF
871D:C3 C5 D3
8720:D3 AF D4
8723:C5 D8 D4
8726:AF D5 D3
8729:C5 AF C5
872C:D3 C3 AD
872F:AD BE
8731:00 803 DFB #00 ;END MESSAGE
8732:20 0C FD 804 LOOP3 JSR RDKEY ;GET CHAR
8735:C9 81 805 CMP #*81 ;ABORT ?
8737:D0 84 806 BNE SKIP3
8739:A9 00 807 LDA #0 ;ABORT CHAR
873B:F0 0A 808 BEQ EXIT7 ;FORCE RETURN
873D:C9 98 809 SKIP3 CMP #*98 ;CONTINUE
873F:F0 06 810 BEQ EXIT7
8741:20 DD FB 811 JSR BELL ;INVALID REDO
8744:4C 32 87 812 JMP LOOP3

```

```

8747:60 813 EXIT7 RTS
8748: 814 *****
8748:48 815 OUTCOUNT PHA ;SAVE CHAR ON STACK
8749:20 C8 86 816 JSR MSGOUT
874C:8D 817 DFB #8D
874D:D4 CF D4 818 ASC 'TOTAL/'
8750:C1 CC AF
8753:00 819 DFB #00
8754:20 C2 85 820 JSR DECOUNT
8757:20 C8 86 821 JSR MSGOUT
875A:AF C3 C8 822 ASC '/CHARACTERS'
875D:C1 D2 C1
8760:C3 D4 C5
8763:D2 D3
8765:00 823 DFB #00
8766:68 824 PLA ;RESTORE CHAR
8767:60 825 RTS
8768: 826 *****
8768:AA 827 THROTOR TAX ;PUT CHAR CODE IN INDEX
8769:BD 37 89 828 LDA ROT1,X ;IN THROUGH THE ROTORS
876C:AA 829 TAX
876D:BD 5D 89 830 LDA ROT2,X
8770:AA 831 TAX
8771:BD 83 89 832 LDA ROT3,X
8774:AA 833 TAX
8775:BD 1B 8A 834 LDA REF,X
8778:A2 25 835 LDX #37
877A:DD 83 89 836 LOOP7 CMP ROT3,X
877D:F0 04 837 BEQ SKIP9 ;AND OUT AGAIN
877F:CA 838 DEX
8780:4C 7A 87 839 JMP LOOP7
8783:8A 840 SKIP9 TXA
8784:A2 25 841 LDX #37
8786:DD 5D 89 842 LOOP8 CMP ROT2,X
8789:F0 04 843 BEQ SKIP10
878B:CA 844 DEX
878C:4C 86 87 845 JMP LOOP8
878F:8A 846 SKIP10 TXA
8790:A2 25 847 LDX #37
8792:DD 37 89 848 LOOP9 CMP ROT1,X
8795:F0 04 849 BEQ SKIP11
8797:CA 850 DEX
8798:4C 92 87 851 JMP LOOP9
879B:8A 852 SKIP11 TXA
879C:60 853 RTS
879D: 854 *****
879D:AD 37 89 855 INCROTS LDA ROT1 ;SAVE FOR LAST
87A0:85 08 856 STA TEMP
87A2:A2 01 857 LDX #1 INDEX FOR SWAPS
87A4:BD 37 89 858 LOOP10 LDA ROT1,X
87A7:9D 36 89 859 STA ROT1-1,X
87AA:E8 860 INX
87AB:E0 26 861 CPX #38
87AD:D0 F5 862 BNE LOOP10
87AF:A5 08 863 LDA TEMP
87B1:9D 36 89 864 STA ROT1-1,X
87B4:E6 1C 865 INC D061
87B6:A9 26 866 LDA #38

```

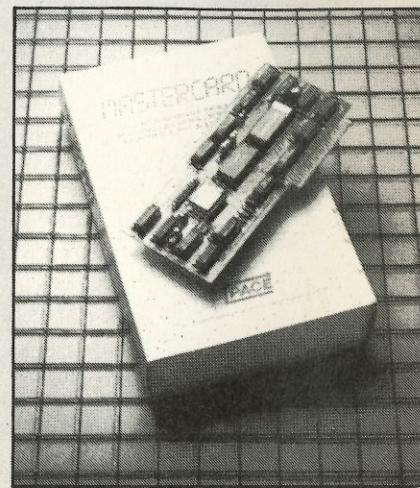

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878B:C5 1C	867	CMP	D061	8833:20 DD FB	933	JSR	BELL
878A:D0 3E	868	BNE	EXIT13	8836:A9 00	934	LDA	#0 ;IGNORE CHAR
878C:A9 00	869	LDA	#0	8838:F0 18	935	BEQ	EXIT1 ;FORCE RETURN
878E:05 1C	870	STA	D061	883A:C9 BA	936	CMP	#': NOTLOW
87C0:AD 5D 89	871	LDA	ROT2	883C:90 14	937	BCC	EXIT1 ;IF <
87C3:05 08	872	STA	TEMP	883E:C9 C0	938	CMP	#'0' ;IF >=
87C5:A2 01	873	LDX	#1	8840:00 07	939	BCS	NOTMID
87C7:8D 5D 89	874	LOOP11	LDA ROT2,X	8842:20 DD FB	940	JSR	BELL
87CA:9D 5C 89	875	STA	ROT2-1,X	8845:A9 00	941	LDA	#0 ;FORCE RETURN
87CD:E8	876	INX		8847:F0 09	942	BEQ	EXIT1 ;FORCE RETURN
87CE:E0 26	877	CPX	#38	8849:C9 D8	943	NOTMID	CMP #'L'
87D0:D0 F5	878	BNE	LOOP11	884B:90 05	944	BCC	EXIT1 ;IF <
87D2:A5 08	879	LDA	TEMP	884D:20 DD FB	945	JSR	BELL
87D4:9D 5C 89	880	STA	ROT2-1,X	8850:A9 00	946	LDA	#0 ;IGNORE CHAR
87D7:E6 1D	881	INC	D062	8852:60	947	EXIT1	RTS
87D9:A9 26	882	LDA	#38	8853:	948	*****	*****
87DB:C5 1D	883	CMP	D082	8853:A2 00	949	WRAP	LDX #0
87DD:D0 1B	884	BNE	EXIT13	8855:06 08	950	STX	TEMP ;SET FLAG POSITIVE
87DF:A9 00	885	LDA	#0	8857:C9 A0	951	CMP	##A0 ;SPC ?
87E1:05 1D	886	STA	D082	8859:D0 22	952	BNE	SKIP25
87E3:AD 03 89	887	LDA	ROT3	885B:A2 01	953	LDX	#1 ;COLUMN 1 ?
87E6:05 08	888	STA	TEMP	885D:E4 E3	954	CPX	LPOS
87E8:A2 01	889	LDX	#1	885F:F0 29	955	BEQ	EXIT17 ;YES SO IGNORE
87EA:8D 03 89	890	LOOP12	LDA ROT3,X	8861:C6 08	956	DEC	TEMP ;FLAG PRINT CHAR
87ED:9D 82 89	891	STA	ROT3-1,X	8863:E6 E3	957	INC	LPOS
87F0:E8	892	INX		8865:A2 51	958	LDX	#01 ;PAST EOL ?
87F1:E0 26	893	CPX	#38	8867:E4 E3	959	CPX	LPOS
87F3:D0 F5	894	BNE	LOOP12	8869:D0 1F	960	BNE	EXIT17
87F5:A5 08	895	LDA	TEMP	886B:A2 01	961	LDX	#1 ;YES SO
87F7:9D 82 89	896	STA	ROT3-1,X	886D:06 E3	962	STX	LPOS ;COLUMN = 1
87FA:60	897	EXIT13	RTS	886F:40	963	PHA	
87FB:	898	*****	*****	8870:A9 00	964	LDA	#0 ;SAVE CHAR
87FB:C9 08	899	TO:ASCII	CMP ##0B	8872:A6 1F	965	LDX	LINUM ;EOL BLANK COUNT
87FD:90 03	900	BCC	SKIP8 ;ITS <	8874:9D 1F 89	966	STA	SPACES,X ;INDICATOR
87FF:18	901	CLC		8877:68	967	PLA	
8800:69 06	902	ADC	##06 ;RESTORE CHAR	8879:E6 1F	968	INC	LINUM ;NEXT LINE
8802:69 2F	903	SKIP8	ADC ##2F ;AND RETURN	887A:4C 8A 88	969	JMP	EXIT17 ;FLAG PRINT CHAR
8804:60	904	RTS		887D:C6 08	970	DEC	TEMP
8805:	905	*****	*****	887F:E6 E3	971	INC	LPOS
8805:38	906	TOSTD	SEC	8881:A2 51	972	LDX	#01 ;PAST EOL ?
8806:E9 2F	907	SBC	##2F	8883:E4 E3	973	CPX	LPOS
8808:C9 0D	908	CMP	##0B	8885:D0 03	974	BNE	EXIT17
880A:90 02	909	BCC	EXIT12 ;YES SO WRAP	8887:20 8B 88	975	JSR	DOWRAP
880C:E9 06	910	SBC	##06	888A:60	976	EXIT17	RTS
880E:60	911	EXIT12	RTS	888B:	977	*****	*****
880F:	912	*****	*****	888B:	978	*****	*****
880F:	913	*****	*****	888B:48	979	DOWRAP	PHA ;SAVE REGISTERS
880F:	914	*****	*****	888C:98	980	TYA	
880F:C9 08	915	BOOD?	CMP ##0B ;<- BS	888D:48	981	PHA	
8811:D0 02	916	BNE	ESC?	888E:A2 01	982	LDX	#1 ;COUNTER
8813:F0 3D	917	BEQ	EXIT1 ;FORCE RETURN	8890:A4 09	983	LDY	TEMP+1
8815:C9 9B	918	ESC?	CMP ##9B ;ESC	8892:08	984	LOOP18	DEY ;POINT TO PREV CHAR
8817:D0 04	919	BNE	SPC?	8893:C0 FF	985	CPY	##FF ;IF NECC ALTER POINTER
8819:A9 FF	920	LDA	##FF ;ESCAPE INDICATOR	8895:D0 02	986	BNE	SKIP28
881B:D0 35	921	BNE	EXIT1 ;FORCE RETURN	8897:C6 07	987	DEC	BUFPTR+1
881D:C9 A0	922	SPC?	CMP ##A0 ;IS CHAR A SPACE	8899:B1 06	988	SKIP28	LDA (BUFPTR),Y
881F:D0 0E	923	BNE	OK?	889B:	989	MSB	OFF
8821:A9 FF	924	LDA	##FF ;IS MODE DECIPHER	889B:C9 2F	990	CMP	# '/' ;LOOK FOR SPC
8823:C5 1E	925	CMP	EDFLAG	889D:	991	MSB	ON
8825:D0 04	926	BNE	SKIP22	889D:F0 07	992	BEQ	WRAP
8827:A9 00	927	LDA	#0	889F:E8	993	INX	
8829:F0 27	928	BEQ	EXIT1 ;YES SO IGNORE	88A0:E0 0E	994	CPX	#14
882B:A9 AF	929	SKIP22	LDA #'/' ;FORCE RETURN	88A2:B0 73	995	BGE	TIDY ;TOO LONG TO WRAP
882D:D0 23	930	BNE	EXIT1 ;FORCE RETURN	88A4:D0 EC	996	BNE	LOOP18 ;FORCE LOOP
882F:C9 AF	931	OK?	CMP #'/'	88A6:8A	997	WRAP	TXA ;DO SPACE TABLE
8831:B0 07	932	BCS	NOTLOW ;IF >=	88A7:A6 1F	998	LDX	LINUM


```

88A9:9D 1F 89 999 STA SPACES,X
88AC:C9 01 1000 CMP #1
88AE:D0 0E 1001 BNE SKIP35
88B0:A9 0D 1002 LDA #0D ;CARRIAGE RETURN
88B2:20 ED FD 1003 JSR COUT
88B5:E6 1F 1004 INC LINUM
88B7:A9 01 1005 LDA #1
88B9:85 E3 1006 STA LPOS
88BB:4C 15 89 1007 JMP SKIP33
88BE:48 1008 SKIP35 PHA ;SAVE COUNT
88BF:AA 1009 TAX
88C0:A9 FF 1010 LDA #FF ;FLAG DOWRAP
88C2:85 08 1011 STA TEMP
88C4:20 4B 86 1012 LOOP19 JSR RUBOUT
88C7:E0 01 1013 CPX #1
88C9:F0 04 1014 BEQ SKIP32
88CB:CA 1015 DEX
88CC:4C C4 88 1016 JMP LOOP19
88CF:A9 0D 1017 SKIP32 LDA #0D ;CARRIAGE RETURN
88D1:20 ED FD 1018 JSR COUT
88D4:E6 1F 1019 INC LINUM
88D6:68 1020 PLA ;RESTORE COUNT
88D7:85 08 1021 STA TEMP
88D9:A5 09 1022 LDA TEMP+1
88DB:38 1023 SEC
88DC:E5 08 1024 SBC TEMP
88DE:80 02 1025 BCS SKIP29
88E0:C6 07 1026 DEC BUFPTR+1
88E2:A8 1027 SKIP29 TAY ;INDEX FOR BUFFER
88E3:C8 1028 INY
88E4:C0 01 1029 CPY #1
88E6:D0 02 1030 BNE SKIP34
88E8:E6 07 1031 INC BUFPTR+1
88EA:A9 01 1032 SKIP34 LDA #1
88EC:85 E3 1033 STA LPOS
88EE:D1 06 1034 LOOP20 LDA (BUFPTR),Y
88F0:09 80 1035 ORA #80 ;NEG ASCII
88F2:20 ED FD 1036 JSR COUT
88F5:E6 E3 1037 INC LPOS
88F7:E6 19 1038 INC NUMBER
88F9:D0 02 1039 BNE SKIP31
88FB:E6 1A 1040 INC NUMBER+1
88FD:C6 08 1041 SKIP31 DEC TEMP
88FF:A9 01 1042 LDA #1
8901:C5 08 1043 CMP TEMP
8903:F0 0A 1044 BEQ SKIP36
8905:C8 1045 INY
8906:C0 01 1046 CPY #1
8908:D0 02 1047 BNE SKIP38
890A:E6 07 1048 INC BUFPTR+1
890C:4C EE 88 1049 SKIP38 JMP LOOP20
890F:E6 19 1050 SKIP36 INC NUMBER
8911:D0 02 1051 BNE SKIP33
8913:E6 1A 1052 INC NUMBER+1
8915:E6 E3 1053 SKIP33 INC LPOS ;POINT TO POSTN PAST CHAR
8917:A9 FF 1054 TIDY LDA #FF
8919:85 08 1055 STA TEMP ;FLAG PRINT
891B:68 1056 PLA
891C:A8 1057 TAY
891D:68 1058 PLA
891E:68 1059 RTS
891F: 1060 *****
891F: 1061 SPACES DS 24
8937: 1062 *****
8937: 1063 *****
8937: 1064 *****

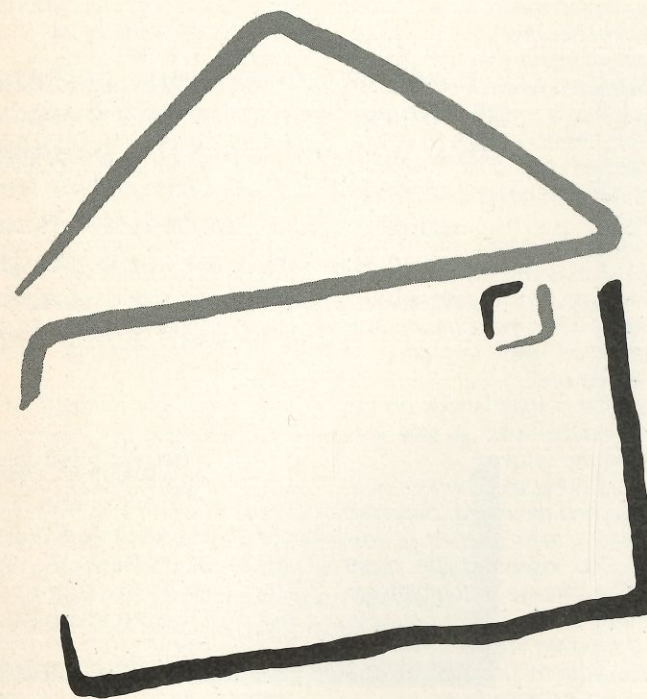
```

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8937: 1065 *****
8937: 1066 ROT1 DS 38
895D: 1067 ROT2 DS 38
8983: 1068 ROT3 DS 38
89A9: 1069 *****
89A9:0C 0D 1A 1070 ROT1D DFB #0C,#0D,#1A,#09,#1B,#01,#16,#0E
89AC:09 1B 01
89AF:16 0E
89B1:04 15 24 1071 DFB #4,#15,#24,#22,#0B,#0A,#0B,#11
89B4:22 00 0A
89B7:0B 11
89B9:07 25 03 1072 DFB #7,#25,#03,#17,#1C,#1D,#0F,#1E
89BC:17 1C 1D
89BF:0F 1E
89C1:02 21 13 1073 DFB #2,#21,#13,#23,#05,#14,#19,#1F
89C4:23 05 14
89C7:19 1F
89C9:12 06 10 1074 DFB #12,#06,#10,#08,#20,#18
89CC:08 20 18
89CF:05 0E 12 1075 ROT2D DFB #5,#0E,#12,#0D,#22,#1E,#21,#03
89D2:0D 22 1E
89D5:21 03
89D7:1D 1F 1A 1076 DFB #1D,#1F,#1A,#24,#1B,#16,#18,#06
89DA:24 1B 16
89DD:18 06
89DF:19 08 20 1077 DFB #19,#08,#20,#23,#0B,#0A,#11,#02
89E2:23 08 0A
89E5:11 02
89E7:17 0F 04 1078 DFB #17,#0F,#04,#1C,#14,#25,#10,#07
89EA:1C 14 25
89ED:10 07
89EF:09 00 01 1079 DFB #9,#00,#01,#13,#0C,#15
89F2:13 0C 15
89F5:1D 14 10 1080 ROT3D DFB #1D,#14,#10,#00,#1E,#0B,#15,#05
89F8:00 1E 0B
89FB:15 05
89FD:20 01 04 1081 DFB #20,#01,#04,#0E,#19,#06,#1C,#03
8A00:0E 19 06
8A03:1C 03
8A05:1F 0C 09 1082 DFB #1F,#0C,#09,#16,#18,#11,#13,#22
8A08:16 18 11
8A0B:13 22
8A0D:02 12 24 1083 DFB #2,#12,#24,#21,#25,#0A,#17,#23
8A10:21 25 0A
8A13:17 23
8A15:08 18 0F 1084 DFB #8,#1B,#0F,#07,#0D,#1A
8A18:07 0D 1A
8A1B:0B 03 1B 1085 REF DFB #0B,#03,#1B,#01,#05,#04,#0A,#1A
8A1E:01 05 04
8A21:0A 1A
8A23:0C 18 06 1086 DFB #0C,#18,#06,#08,#12,#15,#1E
8A26:08 08 12
8A29:15 1E
8A2B:17 22 0D 1087 DFB #17,#22,#0D,#1D,#21,#0E,#19,#18
8A2E:1D 21 0E
8A31:19 18
8A33:09 16 07 1088 DFB #9,#16,#07,#02,#1F,#13,#0F,#1C
8A36:02 1F 13
8A39:0F 1C
8A3B:25 14 11 1089 DFB #25,#14,#11,#24,#23,#20
8A3E:24 23 20
8A41: 1090 *****
8A41: 1091 BUFFER DS #000 ;4 PAGES FOR BUFFER
8E41:FF 1092 PASTBUF DFB #FF ;LABEL FOR COMPARISON

```

*** SUCCESSFUL ASSEMBLY: NO ERRORS



Omni-Reader

THANK you for publishing my letter requesting help from your readers in obtaining information on the Oberon Omni-Reader.

I received only two answers, which may explain the company's failure. For others who might be interested, an American company - G.A.S. International, Inc. 7708 Trinity Blvd. Fort Worth, TX 76118 USA - has bought the rights to Omni-Reader.

The current price (December 1986) is \$199 which seems more in line with a hobby budget.

It should be mentioned that Geoff Wood's review in Apple User overlooked one important point in considering the Applied Engineering Transwarp card. The board has 256k chips but you do not get the use of 256k of ram.

It appears that, because of the space economies, AE used 256k chips. As I understand it, they use one 64k bank to replace the Apple's normal address range, moving the roms to this bank. Only 16k of the second bank is used as a replacement for the optional 16k ram card. The rest of this bank is idle.

The third 64k bank is used as auxiliary memory, as in the case of the Apple IIe. The last 64k is also idle. The total usable memory then appears to be only 144k.

Well, 144k if you own a IIe. If, like me, you have the older II+, most software won't check to see if you have auxiliary memory once it detects that it isn't running on a IIe.

There is hope, however. Most software I have seen checks \$FBB3 or \$FBC0 and the

code can be found on your disc and altered to indicate a IIe. The code usually takes the form of LDA \$FBXX followed by a CMP \$06 or CMP SEA.

Mr. Wood's note on slowing down during text and video accesses is true, but one should remember that the majority of CPU time for these activities does not involve the display itself.

The result is a much speeded-up display, only slowing during actual READs or WRITEs to the screen. - **Marshall P. Brown, Saudia Arabia.**

Prodos reset

IN our Department we have a network of five Apple IIes and a recently acquired IIGS. I have been a regular reader of Apple User for a relatively short time (about six months) but already picked up several useful tips and contacts.

Perhaps you can help me with two minor problems. Firstly, is there any easy CALL, POKE or other routine to reset the Prodos /Ram disc after a program has used this memory for other purposes?

Some of our own software uses chained programs kept in /Ram to reduce the demand on shared disc access, and at the moment it is necessary to reboot Prodos after using some commercial software - for example Mousedesk - in order that the /Ram disc is recognised.

Secondly, Apple Writer does not like my IIGS-ImageWriter II combination; it hangs when I try to print. Fortunately, I use AppleWorks mostly these days, but I would like to keep Apple Writer available nonethe-

less. Can you offer any explanation? - **A. Westwood, Edinburgh.**

● There must be ways to handle the memory - in fact there is a memory manager in rom. However, without the relevant technical manuals I do not know how to do it - I would dearly love to know.

I tried Apple Writer IIc/Prodos on the IIGS and, as you say, it hangs. However, with a printer card in slot 1 it works. Clearly there is a problem which presumably needs a patch. Again I cannot as yet do much.

Max Parrott

PC transfer

I HAVE been using an Apple IIc with AppleWorks for almost three years now and you might say I'm addicted to it. My main application is database, and total contents of files is currently in the megabyte range.

There is no way I would buy another system, but in my office I have to use an IBM-PC, which can also emulate a terminal to the Prime mini, so I'm quite keen to be able to transfer data between the three machines when the need arises.

I have read vague stories about file transfer between IBM-PC and Apple IIe/c via the serial ports which would require an appropriate cable and some software. Nobody seems to know for sure what exactly you would need and where to buy it, and probably nobody has ever actually managed to do it, although I must confess that I have not asked Apple User yet.

So let me tell you about the way I managed partly to transfer files between the two, using an AppleTurnover card and software which just happened to be installed in someone else's IBM-PC in my office.

With word processor files the format in which transfers take place is Ascii and AppleTurnover converts from IBM-Dos (any version) to Apple-Dos 3.3 and back. For documents created in AppleWorks this implies that an Ascii file will have to be converted from Prodos to Dos 3.3 using the system utilities disc.

Although AppleTurnover software is quite user-unfriendly it does strip the 8 bit set from Dos 3.3 files and adds both this and a line feed after a carriage return to IBM-Dos files.

I have not been able to retain the word wrap-around, so there is a potential problem with long documents.

As for database files, on my IBM-PC I have SMART integrated software but I imagine any database program (and I do not fancy SMART's database) can read Ascii files one way or the other.

Transfer from IBM to Apple of Ascii files created in a database program just doesn't work. Each record is dumped into one single field and that's not the idea of a database. Transfer from Apple to IBM does work, but with some time-consuming

◁ problems. Before reformatting from Prodos to Dos 3.3, all fields that are either blank or contain only spaces need to be filled with a character.

I use @ in order to recognise later what I've done. AppleTurnover will then add the usual line feed after carriage return to the file and it can then read the Ascii file into my SMART database.

A 41k AppleWorks file of 150 sectors in Dos 3.3 took just under six minutes from AppleWorks to IBM-PC.

All this will no doubt look time-consuming to you but mind you, when you were as desperate as I was before I managed to transfer files this way, you would have tried almost anything. Obviously there is room for improvements in my current method. I can hardly be the only Ile/Ilc user with this problem and if I am I shall not be the last.

Could you please help me and perhaps quite a few other readers and tell me: Do you have experience with transferring database and word processor files between IBM and Apple Ile/Ic and if so, can you recommend a method better than the one briefly described above?

In the unlikely event that you use the method described above, could you recommend any improvements? – **Ben Mar-selis, Woking.**

● I've transferred quite a few source files, that is Ascii text files, in Pascal and Basic from the Apple to MSdos and BBC. This I did simply by listing the files to the serial card of the Apple and using COPY AUX A: FILE.TXT in the MSdos machine.

However, this is simple text. As soon as you move data from a database or a word processor you run into formatting problems. You either have to write a program on one of the machines to translate formats or you have to transfer files and reformat by hand.

Max Parrott

Wear and tear

OVER the last 12 months I have had a couple of apparently serious problems with my Apple II+ Europlus which have been solved in surprisingly simple ways.

For the last year I have been carting my computer to and from work, and I think that the problems relate directly to this heavy wear and tear on my system.

The first related to a very common blunder when connecting the 20 pin socket from the Disc II to the Controller Card. Yes, I very neatly transposed the connector so that the pins closest to the circuit board were not engaged at all and the outer pins were connected to the wrong row of holes on the socket.

This destroyed the 74LS125 on the analog board inside the Disc II which I duly replaced. This worked perfectly for a short time until I started having problems with the drive operating intermittently. Replacing the 74LS125 again seemed to fix things, but

only very briefly.

After pricing replacements for the other chips from Apple, I decided on a last fiddle. Lo and behold, I found that the ribbon cable had deteriorated where it entered the 20 pin socket. It was a simple job to reterminate the cable. Presto – problem solved.

A second problem was quite infuriating and one I was sure was going to be expensive to resolve.

With increasing regularity over a few months I found that my power supply would fail for no apparent reason. It would happen frequently when the computer had just been turned on, then less often as everything warmed up.

I discovered that a sharp knock on the side of the computer was all that was needed to restart the system.

I began by checking the connectors to the motherboard and the mains, but could find no problem. I then opened up the power supply and inspected the circuit board for obvious damage to components. None was visible.

Removing the power supply board and inspecting the bottom (track side) also failed to reveal any obvious faults.

Having decided that the problem was beyond me I set about pricing a replacement. Just before I took the plunge and purchased a new power supply I decided to make a last attempt to locate the faulty component in mine.

With the power supply cover removed (warning – this is very dangerous as there are high voltages present – use only a properly insulated screwdriver) I prodded various components until I isolated the problem to the power transistor near the mains input end of the board. A light tap on this was enough to get the power supply working after it had crashed.

With the mains well and truly disconnected, close scrutiny of the track side of the board showed extremely fine hairline cracks in the solder pads around the base and emitter pins of the power transistor. It was a minute's work to resolder these connections, and it has worked perfectly since.

A couple of warnings. Dangerous voltages are present inside the power supply – under no circumstances try this if you are unsure of any procedures, and only use properly insulated tools.

If you attempt repairs and open up your power supply, you may find that Apple will refuse to service the machine later.

The power supply I have been referring to was made in Hong Kong for Apple and has the serial number A2M0030-183533. My Europlus was assembled in Ireland in about 1981. – **Ian Wright, Australia.**

Bulky discs

ABOUT a year ago I wrote to you for advice about my Prodos problem with the Apple II+. I have now returned to it, as I want to try the word processor on these discs.

I have reread your letter and find it odd

that your Apple II+ accepts these discs and mine does not. I did all the things you mentioned, with no joy. The error messages are as follows:

AppleWorks Startup disc: AppleWorks requires an 80 column Ile

The program disc: Unable to load Prodos System Utilities disc: "No device connected, break in 1020"

Prodos 1.0.2 15 Feb 84

I also borrowed from my brother a further disc which I had converted with the aid of a utility on the disc set of his Ilc which is labelled "Prodos converted to 3.3 (2/8/85). "Not a 3.3 Startup disk" is the message it gives.

So I am at a standstill. My current disc slots contain:

Slot 0 – Language 16k

Slot 1 – Parallel printer card

Slot 2 – Blank

Slot 3 – Videx Videoterm card

Slot 4 – 80 column card

Slot 5 – Drive C card

Slot 6 – Drive B and A card

Slot 7 – Blank

I tried taking out the Videoterm card without result. I enclose some material I have been able to print which might be of help.

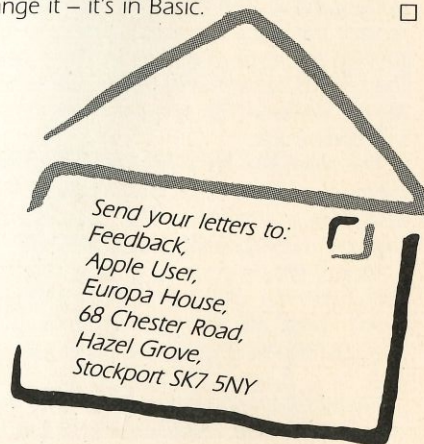
I would appreciate your further comments. There is nothing unusual about these discs; they were copied by myself on a new Ilc in Los Angeles using whatever copy facility that machine has. I am puzzled why I'm having all this difficulty. My Apple II+ is old but reliable and used almost entirely in CPM-dBasell. – **A. Heaney, Birmingham.**

● Each of the error messages you quote is not originating from Prodos – there is nothing wrong with your machine, nor with Prodos.

AppleWorks will not work on a II+ because it needs an extended 80 column card – Ile, Ilc, Ilgs style. You can buy a program to patch it to make it work, but you will only have a desk top work area of 11k, which is rather small – say four or five pages in the word processor.

The "Unable to Load Prodos" message means just that – Prodos is not in the disc. Copy it on and it will work.

The systems utility disc is not working because it was written for a Ilc. You could change it – it's in Basic.



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● Apple Ile, 128K 80 Col, Monitor,

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January 1985

John Sculley's View of 1985 - Games (Golfing Adventure, Story Maker, Stellar 7) - Application: Apples down on the Farm - Cloze Technique (Plus review of Clozemaker) - World of the 6809 Part II: Flex Operating System - Apple II v ITT 2020 - Reviews (Ormbeta Compact Accounting System, CGL Half-Height Drive) - Apple IIe and IIc compatibility - Handling interrupts and large arrays in Pascal - Reporter's view of Macintosh - PLUS News, New Products, Appletips and Letters.

June 1985

Apples keep track of music companies and Macintosh designs record sleeves - Fun and Games (Music Construction Set, Song Writer, Music Readiness) - Pascal Tutorial: start of a new series looks at records - Reviews (Tick-Tack translation package for Apple II+/IIe, Musicworks for Macintosh) - Graphics (three books reviewed) - Mugraph: light dependent resistors making sounds - Ampersound: routines for making music and sounds from Basic - PLUS all the latest News, New Products and Readers' Letters.

January 1986

Spreadsheet model for sales forecasting - Pascal tutorial: speed-up techniques - Fun & Games (Colossus Chess 4.0, One Man Band) - Application: how a shopkeeper uses an Apple IIc - Reviews (Laytani disk controller card, Lemi Midi interface) - Heapsort in Fort and Basic - Macintosh reviews (Crunch, Mac II) - Duodisk write protect switch hardware project - &DOSFile: expansion and compression - Index to Volume 5 - PLUS News, New Products, Appletips and Letters.

August 1986

Reviews (Expand the IIc's capacity with MultiRam, Full-text, New Zealand-derived word processor) - MicroLink update - Part 3 of Paul Sennett's hi-res picture editor program - Fun and Games (Elite, Chess, Balance of Power, Bond's Tale) - Spreadsheet: How to get wealthy on the Stock Market, Part II - Pascal: D. Jones' dump for Imagewriter, J.P. Lewis grapples with Boolean logic - Using UltraTerm more fully - CP/M: Automate Wordstar - PLUS all the latest Apple news and lots of your letters.

October 1986

Reviews: The new Apple II GS, the Macworks utility for Appleworks, circuit design with Logimac, Your Best Interest (book) - Utilities: Mousekeeping with Pascal, ProDOS error messages, Date-stamping DOS 3.3 files, Handling dates - Fun & Games: Trinity, The Hobbit, Stickers, MacGolf - MicroLink Update - Game: Space Cargo (listing) - Business: How to prepare Cash Flow Budgets - Hardware: Installing Disk II and standard roms in the IIe - PLUS all the latest Apple news, new products and your letters.

February 1985

Steve Wozniak talks about Apple II developments - Quicksort algorithm in Fort and Basic - Games (Deadline, Witness, Planetfall, Enchanter, Scorerer, Expedition Amazon) - Graphics DIY part XI - Targeting with a spreadsheet - Apple to Apple file transfer - Miners' strike resolved by computer? - Chemical formulae on Lisa - two Macintosh books reviewed - World of the 6809 Part III - Software reviews (Sales Edge and Management Edge) - Application: book publishing - Split screen techniques - PLUS News, new products and letters.

July 1985

Apples at the heart of Papworth Hospital - Fun & Games (Secret of Arendarvon Castle, Antagonists, Fahrenheit 451, Rendezvous with Rama, Amazon, Shadowkeep, Adventure Writer) - Pascal Tutorial: using files of records - Binary file load utility - Using extended 80 column card memory - Macintosh (Flowcharting, Preview of Guide) - Book reviews (Business Basic, Epson printers) - Reviews (FingerPrint and Printerrupt) - Graphics DIY Part XIV - DOS patches - PLUS News, New Products, Letters and Appletips.

February 1986

Hi-res overlay utility - Pascal tutorial: first look at dynamic memory usage - Hardware: build an interface for Snap EVI video RAM camera - Application: Apples at home in 14th century house - &DOSFile: database and form generator - Reviews (Cirtech and Tymac printer cards) - Macintosh (reviews of Microsoft File and Ensemble) - Fun & Games (Seven Cities of Gold, Adventure Construction Set, The Pay-Off) - Using Text Page 2 - PLUS News, New Products, Letters and Appletips.

September 1986

Graphics: Print Shop expanded - Game: Brick Shoot Out - Utilities (Simplify graph production, date stamp IIc files, print formulae with Practical II) - Fun and Games (Ballyhoo, Ootopos, Clip Art for Newsroom, and Ultima II) - MicroLink update - Spectrogram: Colour for the Apple IIc - Perfect pitch with Guitar Tuner - Reviews (Comprehensive Interface System and Acqsoft for laboratory data, Pinpoint, Cirtech's Z80 board and CP/M Plus) - PLUS all the latest Apple news, New products and your letters.

November 1986

Reviews: Peanut external drive for the IIc - MacTel: the Macintosh Bulletin Board - Switchback: An American only answer to roms problem of the IIe - More on the Ultraterm - Apple UCSD Pascal 1.3 - Utilities: Prodos system file finder, HiRes picture shrinker - Pascal Tutorial: - Graphics: - Fun & Games: Science Toolkit, MacInooga Choo-Choo, Leather Goddesses of Phos, Theatre Europe - CP/M: New series - Desktop Publishing: It's growth is examined - Game: Dodge it - PLUS all the latest Apple news.

March 1985

Circle drawing algorithms - Super Pilot System Log - Summarising data with VisiCalc - Competitive estimating with Multiplan - Graphics DIY part XII - Ampersand editing - Macintosh (MacTerminal, Mouse Stampede, optical mouse, plus Mac book) - Reviews (Merl modem, Intec hard drive, Vision 128/256 card, the Editor, plus three educational packages) - Fun and Games (Xyphus, Fighter Command, Picture Writer) - PLUS News, New products, letters and Appletips.

August 1985

Spreadsheet secrets shared - Apple IIIs provide power behind computer bureau - Graphics DIY Part XV - Wordstar scrolling problems solved - Descartes data processing program generator - Fun & Games (Winnie the Pooh, Mickey's Space Adventure, Print Shop, Hitchhiker's Guide to the Galaxy) - Mac at the centre of a publishing revolution - Pascal Tutorial: random access files - Review of Micro Planner for Macintosh - Graphics DIY Part XIV - DOS patches - PLUS News, New Products, Letters and Appletips.

March 1986

Pascal tutorial: dynamic memory usage Part 2 - Fun & Games (Transylvania, Ring Quest, Crimson Crown) - CP/M: PIP patch to enable repeated commands - &DOSFile: RAMdisk function - ProDOS: four books reviewed - Spreadsheet: useful miles-per-gallon calculator - Comms: budget equipment interfaced to Apple Part 1 - Reviews (Speed-Loader, P-tral) - Macintosh (review of Ultraplus) - Machine code step-by-step tracer utility - Applesoft lower case input routine - PLUS News, New Products and Letters.



December 1986

Review: MacServe - AppleWorld. A full report on Apple's event of the year plus a look at the Education Conference - Desk Top Publishing: Six pages covering all the news on this up and coming market. Programming: CP/M and Pascal Tutorials - Utilities: Appointment Program & Extra Basic commands - Fun & Games: Silent Service, Moonmist, Puzzle Master - Plus all the Apple world news, details of the latest products and your letters in the popular Feedback feature.

April 1985

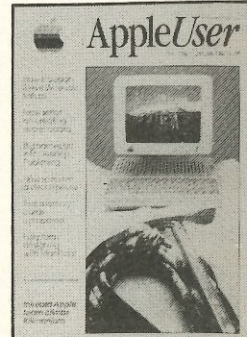
Apples in the dental surgery - Adding graphics commands to Applesoft - Using the VBLANK signal - Getting to grips with software - Reviews (Speed-Demon card, PFS File/Report for Macintosh, W-P-LAB) - Weather forecasting with Mac - Pascal Filer's D command - Fun and Games (La Trivia, Design Your Own Home: Architecture, Interiors, Landscape) - Books (Appleworks, VisiCalc, Machine level programming) - Index to Windfall Vols. 1 and 2. PLUS News, New products, Letters and Appletips.

September 1985

Appleworks spreadsheet eases house purchase calculations - Pascal Tutorial: Units - Macintosh: Review of Lotus Jazz - Applesoft line by line comparator - Graphics dumps via a Super Serial card - Mac Publishing: Review of three page layout packages - Kitchen design based on Apple IIe - Choosing educational software - Bomb-proof input routines - Fun & Games (Skyfox, Wishbringer, Rescue Raiders) - Book reviews (Visicalc, Accounting software) - PLUS News, New products, letters and Appletips.

April 1986

Pascal tutorial: Tips and books - Fun & Games (Ultima IV, Spellbreaker, Captain Goodnight) - Scrolling hi-res pages - Making the most of Wordstar - Spreadsheet: presenting balance sheets in visual form - ProDOS Part 2 - Reviews (Supercharged Apple II with Snapshot Shuttle and Cirtech Flipper, Jeeves for desktop facilities) - DOS amendment to display free sectors - Application: Apples in use in a technical college - PLUS all the latest Apple news and your letters.



January 1987

Review: Format-80 Scientific, Ramfactor and Multiram memory cards, Autoworks - Programs: Electronic Orrery, Text encoding - Tutorials: CP/M I/O devices & Pascal screen control - Interview with Steve Wozniak - Desk top publishing: Five pages covering the news on this up & coming market - Fun & Games: Toy Shop, Artic Fox, Decision in the Desert and Graphics & Expander Vol. 1 - Utilities: Form making with MacPaint - Report on Apple UK trip to Kilimanjaro - Index to 1986 Apple User.

May 1985

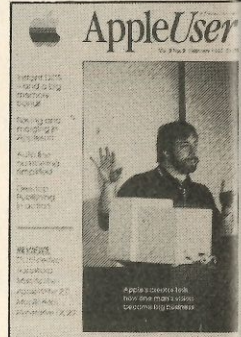
Sports Day runs smoothly with Apples - Graphics DIY Part XIII (pie charts) - Reviews (The Workbench, Macputer IIc, Copytext, Omnis 2 on Macintosh, seven Logo books) - The RWTS explained and demonstrated with a disc verify routine - protecting programs from Copya - Pascal (directory access from within programs) - Bin-search in Fort and Basic - Reaction Timer - Apples in Hungary - Fun & Games (Smart Shopper, Plantin' Pal, Micro Cookbook) - PLUS News, New products, Letters and Appletips.

October 1985

&DOSFile: start of a new series - spreadsheet for home budgets - Apples in a Hertfordshire college - using Page 3 routines with a language card - Graphics DIY Part XVI - Reviews (Ramworks extended 80-column card, Computereyes and Magic digitisers) - add a factorial function to Basic - Pascal tutorial: assembly language programming - lower case Pascal - Fun & Games (Mix and Match, Spotlight, Instant Zoo, Ernie's Quiz) - free sectors on disk - PLUS News, New Products, Letters and Appletips.

May 1986

Hi-res Picture Editor Part 1 - Fun & Games (Carmen Sandiego, Newsroom, Scamper) - Spreadsheet: Check your electricity bills - Reviews (Graphworks, Resolution 64, Flipper) - Renummer long programs using Exec - An easy way to edit Programs with a Word Processor - Hangman with BIG letters: Ideal for the disabled and poor sighted - Word Squares Generator - ProDos manuals revisited - Application: Apples in newsagents' shops - PLUS all the latest Apple News, New products and your letters.



February 1987

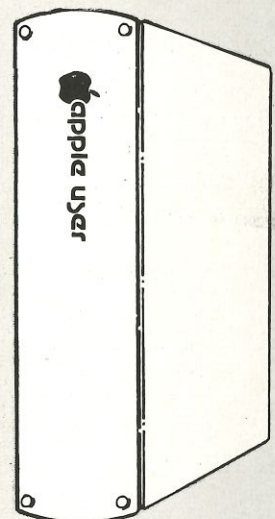
Reviews: Transwarp, Multi-scribe, AppleWriter (an overview), Dots Pfect and two hard discs - MacBottom and Hyperdrive - Programming: More printer control in Pascal, PIP & STAT in CP/M, & programs to give instant DOS 3.3 and auto line numbering under DOS & ProDOS - Interview: Second part with Steve Wozniak - Desk Top Publishing: Newspapers and Journals & The Wordsmith - Fun & Games: Standing Stones, Mind Pursuit, Uninvited, Mask Parade and The Pawn all reviewed.

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November 1985

Graphics Library final part plus disc offer - MEMDOS operating system - calculating duty rosters with a spreadsheet - Macintosh: reviews of Microsoft's Excel and P&P's fat Mac upgrade - ProDOS gives Applesoft new lease of life - Review of Cirtech CP/M Plus system for IIc - Apple word processors compared with MS-DOS counterparts - &DOS-FILE: two more routines added - Pascal tutorial: parameter passing - extra tracks on discs - Fun & Games (Suspect, Karateka, Dazzle Draw) - PLUS News, New Products and Letters.

December 1985

Hardware project to improve video output - Pascal Tutorial: bomb-proofing programs - &DOSFile: data compression techniques - date calculations with Multiplan - Application: Apples in an academic household - Review of DDTe debug card - Macintosh: reviews of MacType and Mac the Knife Fonts - Fun & Games (Sword of Kadesh, Cutthroats) - Sliding block puzzle in Metacraft's Fort - Apple User Games Disc offer - PLUS News, New Products and three pages of readers' letters.

June 1986

Hi-res Picture Editor Part 1 - Fun & Games (Carmen Sandiego, Newsroom, Scamper) - Spreadsheet: Check your electricity bills - Reviews (Graphworks, Resolution 64, Flipper) - Renummer long programs using Exec - An easy way to edit Programs with a Word Processor - Hangman with BIG letters: Ideal for the disabled and poor sighted - Word Squares Generator - ProDos manuals revisited - Application: Apples in newsagents' shops - PLUS all the latest Apple News, New products and your letters.



March 1987

Reviews: Micol basic, ComicWorks and GraphicWorks for budding cartoonists - Programming: Device assignments in CP/M, file editing in Pascal, coding and decoding in Pascal, playing Patience - Utilities: Booting Pascal 1.3 and customising CIA Files - Desktop Publishing: Graphics Factory visited and an update on the latest hardware and software - Fun and Games: Shanghai, 221B Baker Street and Crosscheck reviewed - PLUS all the latest Apple News and your letters.

April 1987

Reviews: Pinpoint Pop up Spelling Checker, Pinpoint Ram Enhancement, Gutenberg Word Processor - Programming: Using DDT in CP/M, Pascal Printer Control Unit in action - Utilities: Making more of Print Shop's Graphics, Encoding continued - Application: Low-cost Image Analysis - Desk Top Publishing: Macs in the newspaper industry, an introduction to DTP, book on PageMaker techniques - Fun & Games: F-15 Strike Eagle, Crusade in Europe, Alternate Reality, The City, Hacker II - Feedback.

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